

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1672.—VOL. XXXVII.

London, Saturday, September 7, 1867.

STAMPED ... SIXPENCE
UNSTAMPED.. FIVEPENCE

M. R. JAMES CROFTS, STOCK AND SHAREDEALER,
No. 1, FINCH LANE, CORNHILL.
(Established 24 years.)

PRINCE OF WALES shares are declining in market value, apparently without adequate cause. At the same time Mr. CROFTS strongly recommends purchases for investment, there being no vital change in the ultimate prospects of the mine.

Shares recommended for immediate purchase are CHIVERTON MOOR, NORTH CROFTY, EAST LOVELL, GREAT LAXEY, GREAT VOR, MARKE VALLEY, SOUTH FRANCES, WEST CARADON, WEST CHIVERTON, PROVIDENCE, HERDSFOOT, EAST CARADON, WHEAL SETON, EAST BASSET, and PRINCE OF WALES.

Mr. CROFTS is also a BUYER of all that above at full market prices.

* * Businesses in the shares of the LILY QUARRIES (Pembrokehire), on the merits of which copious details can be given. These quarries are estimated to be returning the largest profits of any recently opened.

BUYER of 1000 shares Okel Tor, at 6s. 6d. per share net.

* * SELLER of 20 East Rosewarne and 30 Rosewarne United, all calls paid, for £6 6s. net cash.

Bankers: National Bank of Scotland, Finch-lane.

WILLIAM LANE, 44, THREADNEEDLE STREET, LONDON, E.C., STOCK AND SHAREDEALER (Established Thirty Years), has FOR SALE the following SHARES:—

25 Chiverton Moor, £1 13	50 Caldebeck Fells, 15s.	50 No. Treskerby, 37s 6d.
20 Chontales, 25 6s. 3d.	40 Frontino, 12s. 6d.	10 North Phoenix, 21s.
15 Chiverton, £7.	30 Frank Mills, 16s. 6d.	25 Marke Valley, £5 8s 9d.
25 Don Pedro, £2 14s.	10 Gt. No. Laxey, 16s. 6d.	10 Prosp. Unit., £2 2s.
15 East Lovell, £7 14s.	25 Gt. No. Downs, £4 2s.	15 Wh. Trelawny, £8 14s.
20 East Grenville, 40s.	10 Great Laxey, £1 18s.	50 Wh. Grenville, 17s. 6d.
20 East Caradon, £5 6s.	20 Hington Down, £2 2s.	(call paid).

SPECIAL BUSINESS AS BUYER or SELLER in North Treskerby, Marke Valley, East Caradon, Don Pedro North del Rey, Great Laxey, and Herdsfoot, either for cash or fortnightly settlement.

GUIDE TO INVESTORS.—MR. LELEAN'S STOCK, SHARE, AND FINANCE REGISTER for September, contains an analysis of the financial statements of all the joint-stock companies that have been issued during the month of August, with their dividends, and such information as is necessary to guide intending investors. 6d. per copy, or 5s. annually, post free.

Published by Mr. BAKER LELEAN, at his offices, 11, Royal Exchange, London.

M. R. WILLIAM WARD, STOCK AND SHAREDEALER, NO. 29, THREADNEEDLE STREET, LONDON, E.C.

M. R. JOHN BATTERS, STOCK AND MINING SHAREDEALER, 13, THROGMORTON STREET, LONDON, E.C.

M. R. WILLIAM SEWARD, STOCK AND SHAREDEALER, 19, THROGMORTON STREET, LONDON, E.C.

M. E. S. S. R. S. WARD AND JACKMAN, STOCK AND SHAREDEALERS, CUSHION COURT, OLD BROAD STREET, CITY, E.C.

Messrs. WARD and JACKMAN are DEALERS in every description of mining properties at close market prices, either for immediate settlement or the fortnightly account.

Bankers: London and Westminster, Lothbury.

M. R. THOMAS THOMPSON, MINING OFFICE, 12, OLD JEWRY CHAMBERS, LONDON, E.C.

M. E. S. S. R. S. WILSON, WARD, AND CO., SHAREDEALERS, 16, UNION COURT, OLD BROAD STREET, LONDON, E.C.

BUYERS of any number of Frontino and Bolivia, and New Great Consols, shares at full market price. A special report upon New Great Consols Mine can be had on application, post free.

Attention is directed to the report of East St. Just Mines, inserted in this week's Journal. These shares should be bought at present price. The mines are returning nearly £12,000 worth of tin annually, and a great improvement has taken place in the lode at the engine-shaft.

M. R. G. D. SANDY, STOCK AND SHAREDEALER, NO. 48, THREADNEEDLE STREET, LONDON, E.C., TRANSACTS BUSINESS IN EVERY DESCRIPTION OF STOCK EXCHANGE SECURITIES, MINING and FINANCIAL ENTERPRISES, at close market prices.

Correct Daily Price List may be had on application.

Money advanced to any amount on legitimate stocks and shares.

References exchanged.

JOHN RISLEY, STOCK AND SHAREBROKER (SWORN BROKER), 48, THREADNEEDLE STREET, LONDON, E.C.

Bankers: London and Westminster, Lothbury.

M. R. JAMES HUME, 74, OLD BROAD STREET, MEMBER OF THE MINING EXCHANGE, LONDON. TRANSACTS BUSINESS in all description of railway stocks, mine shares, and miscellaneous securities, at nett prices, and at margins of 1 1/4 per cent. on mine shares, and 3/4 per cent. on railways.

Has BUSINESS in Chontales, Pestarena, Don Pedro, Anglo-Brazilian Gold; also in East Basset, East Russell, Prince of Wales, Crebior, South Condurrow, Chiverton Moor, West Chiverton, Clifford, Uny, and all other Mines, Railways, and miscellaneous shares.

East Chiverton is recommended by Mr. HUME on its merits and prospects of early success. Particulars on application.

A well selected list of good shares, dividend and progressive, likely to rise during the next few months, can be supplied.

Bankers: The London Joint Stock Bank.

M. R. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S, BISHOPSGATE STREET, LONDON, E.C. (Established 13 years), has FOR SALE the FOLLOWING SHARES, at nett prices:—

1 Wheal Seton, £1 15s.	15 Prosper Unit., £2 16s	25 South Darren, 28s. 9d.
20 Summer Hill, £10 1/2s.	50 Redmoor, 7s.	50 North Jane, 3d. 3d.
50 W. Drake Walls, 5s 6d.	20 Anglo-Brazil., 13s. 3d.	25 So. Condurrow, 12s 6d.
5 Tincroft, £1 3/4s.	3 East Basset, £1 9/4s.	15 East Carn Brea, £1 6s 3d.
10 W. Lovell, £7 11s. 3d.	10 Chiverton, £6 6s.	10 Chiverton Moor, £5 8s 9d.
5 W. Chiverton, £6 4/4s.	50 Drake Walls, 12s.	5 West Caradon, £8.
10 East Caradon, £5 6s.	4 Providence, £3 1/4s.	15 North Croft, £4 1/4s.
1 Wheal Bassett, £7 9s.	15 Gt. No. Downs, £4 1/4s.	15 Gt. No. Dows, £4 1/4s.
25 Chontales, £5 5s.	20 E. Grenville, £1 18s 9d.	20 East Russell, 32s.
Pr. of Wales, 52s. 6d.	20 Frank Mills, 18s. 9d.	3 So. Frances, £2 9/4s.
Clifford, £8.	2 Wheal Buller, £2 1/4s.	20 Granville, 14s. 6d.
Rock's Kitchen, £10 5s.	5 Gt. Wh. Vor., £1 18s 4d.	5 Great Laxey, £1 18s 4d.
Marke Valley, £8 9s.	50 Frontino, 11s. 3d.	50 West Kitty, 12s. 6d.
50 South Tolgus, 8s.	20 Rosewarne Cons., 38s 6d.	20 West Maria, 17s.

WILLIAM MICHELL, STOCK AND SHAREDEALER, either for cash or time transactions, and has SPECIAL BUSINESS in the following shares:—

50 East Caradon. 150 Mines Purchase. 50 North Croft.

50 Great North Downs. 100 East Russell. 500 Grenville (offer wntd.). 100 Westminster.

10 Deep Level (Halkin). 200 Prince of Wales. 100 Bryn Gwlog.

100 Bryn Gwlog. 10 Carn Brea.

PRINCE OF WALES.—I have not given my opinion without due consideration and personal examination, and still persist an engine is required, as all the levels in the mine are suspended in consequence of not having drawing power. If they cut a north lode they may get another pumping-engine underwheal directly. In my opinion, if the mine is fairly worked the dividend will be the first and final.

MINES PURCHASE, &c. (Limited).—1. The dividend promised in August has been deferred. I should say sine die.

GRENVILLE.—Another "rasping" call, but not sufficient to pay off all the outstanding bills, some of which I hear have been running for three years. Another case by-and-bye for the—

STANLEY COURT.—2. Ought to have been abandoned years since. It is such things as these that deter the public from going into honest and legitimate mining.

Apply to W. MICHELL, 42, Cornhill, London, E.C.—Sept. 6, 1867.

M. R. GEORGE BUDGE, STOCK AND SHAREDEALER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 19 years), has FOR SALE at nett prices:—100 Anglo-Brazilian, 18s. 6d.; 50 Don Pedro, £2 prem., ex div.; 50 United Mexican; 100 Port Phillip, 27s. 6d.; 120 Frontino and Bolivia, 12s. 6d.; 25 Postema; 100 West Tremayne, 7s. 6d.; 50 Okel Tor; 150 Redmoor, 6s. 6d.; 10 Rose and Chiverton United; 50 Pendene, 17s. 6d.; 25 West Maria and Fortescue, 16s.; 50 Great South Tolgus, 9s. 6d.; 2 Miners; 100 North Downs, 9s.; call paid; 50 Wheal Grenville; 50 New Quebradas, 18s. 6d.; 100 West St. Ives; 50 Caldebeck Fells, 17s.; 20 North Retallack, £5 5s.; 200 Dale, 2s. 6d.; 50 Crebior, 8s. 6d.; 25 Gwyston, £4; 50 Drake Walls, 12s.; 50 Creake;

CORNISH, DEVON, AND GOLD MINES.—Shareholders should read this week's number of PETER WATSON'S "WEEKLY MINING CIRCULAR AND SHARE LIST" (No. 440, Vol. IX.). Price 6d. each copy, forwarded immediately on application.

BUYERS and SELLERS of shares in mines, before operating, will do well to read this "Weekly Circular," published every Friday.

PETER WATSON'S "WEEKLY MINING CIRCULAR AND SHARE LIST"—SYNOPSIS OF CORNISH AND DEVON MINES, of Friday, Sept. 6, No. 440, Vol. IX., price 6d. each copy, forwarded on application, containing information on the following mines:—

East Wheal Lovell. Marks Valley. Drake Walls.

East Trumpet. Tincroft. Prince of Wales.

North Wheal Chiverton. Great South Tolgus. Wheal Grenville.

Chiverton Moor. Cook's Kitchen. Wheal Seton.

Great Work. Providence. Wheal Basset.

North Wheal Croft. Frontino and Bolivia. South Wheal Frances.

South Caradon. Chontales. Devon Great Consols.

West Drake Walls. Mining Association (Li- mited). Dolcoath.

Great Laxey. Trumpet Consols. North Roskear.

East Grenville. West Chiverton. Prosper United.

West Wheal Seton. Wheal Chiverton. Wheal Mary Ann.

East Wheal Basset. Clifford Amalgamated.

Great Wheal Vor. Stray Park.

West Wheal Frances. West Great Work.

Frontino. Don Pedro North del Rey.

Great North Downs. South Wheal Croft. Pestarena.

With Remarks on the Present Prospects of the Cornish Mining Interest, Advanced in the Copper Standard, and particulars of the lately-published Board of Trade Returns.

PETER WATSON, Stock and Sharedealer, 79, Old Broad-street, London, E.C.

STOCK AND SHAREDEALER.—MR. PETER WATSON, ENGLISH AND FOREIGN STOCK, SHARE, AND MINING OFFICES, 79, OLD BROAD STREET, LONDON, E.C.

Railway, Joint-Stock Banks, Dock, Insurance, Canal, Mining, Steam-ship, &c., and every other description of shares bought and sold at nett prices.

TELEGRAPHIC MESSAGES TO BUY or SELL Railway, Bank, Mine, and other shares and stocks, punctually attended to, at nett prices for cash, or for fortnightly settlements, with advice as to purchases or sales.

Twenty-two years' experience.

(Two in Cornwall and Twenty in London.)

Bankers: The Alliance Bank, and the Union Bank of London.

From the close proximity of his offices to the Stock Exchange, as well as on the Mining Exchange, PETER WATSON is enabled to act with promptitude on all orders entrusted to him, which at all times are carried out with punctuality, and to the best advantage of his clients.

M. R. EDWARD COOKE, STOCK AND SHAREDEALER, 76, OLD BROAD STREET, LONDON, E.C.

Deals in Chontales, Don Pedro North del Rey, Rosa Grande, Anglo-Brazilian, Frontino, Prince of Wales, Chiverton Moor, North Wheal Chiverton, West Wheal Kitty, West Great Work, and North Croft, at close market prices nett.

Orders for all kinds of Stock Exchange securities, either by letter or telegraph, promptly attended to.

Satisfactory references given in any town in the United Kingdom.

Bankers: Alliance Bank.

M. R. W. H. COOKE & CUELL, STOCK AND SHAREDEALER, 1, FINCH LANE, CORNHILL.

References exchanged.

All transactions can be for cash or account.

Bankers: Bank of England.

M. R. T. ROSEWARNE, 81, OLD BROAD STREET, LONDON, has BUSINESS in the following shares for cash or time on:—

Clifford. East Grenville. North Treskerby.

*East Carn Brea. North Retallack.

*Frontino. Prince of Wales.

*Gawton. South Frances.

Caldebeck Fells. South Grenville.

Cargill. Great Wheal Seton.

*Don Pedro. Great South Chiverton.

*East Russell. Great Wheal Agar.

*East Wheal Croft.

Shares marked * should be secured at the present quotations; they are safe for a substantial rise in price before long.

BARTLETT and CHAPMAN'S "Investment Circular and Financial Record" for this month is now ready, which contains important information as to Great South Chiverton, East Chiverton, Lovell Consols, West Chiverton, and other South Chiverton likely to have a great advance within the next few weeks.

Bankers: London and Westminster Bank.

MATTHEW GREENE, STOCK AND SHAREDEALER, ST. MICHAEL'S HOUSE, CORNHILL, LONDON, E.C.

MATTHEW GREENE recommends for immediate purchase Tamar Valley Silver.

Lead

Original Correspondence.

CORNISH ENGINES, &c.

SIR.—I send you the following remarks on the papers and discussion at the Swansea meeting of the South Wales Institute of Mining Engineers, on Aug. 17, the particulars of which appeared in the Supplement to the *Mining Journal* of Aug. 24.

Mr. Ross said that the ordinary standard of perfection of the Cornish engine was 80 millions of foot-pounds for 1 cwt. of coal consumed, or 2 $\frac{1}{2}$ lbs. of coals per horse-power per hour; but, after all, he seems to think that this is no great effort, for marine engines, with comparatively low pressure, realise a duty of 34 lbs. per horse-power. This does not fairly state the case, because the former calculation is the actual pounds of water raised—the actual duty, minus friction. Now, as everyone knows, in marine calculations the duty actually performed is plus friction, and a great many other items get into the calculation of horse-power, and if the marine engine were put to pumping water we should very likely find it actually consuming 5 lbs. or 6 lbs. or more per horse-power. Mr. Ross has simplified the statement of duty, but he might have done so still more by showing the work done. Thus, a Cornish engine, doing 80 millions of duty, will work an 18-in. plunger, working 10 10-ft. strokes per minute, for 100 fms. (1080 gallons per minute), and only use about 43 cwt. of coal per hour, or 5 tons 16 cwt. of coal in the 24 hours. Now, I have no hesitation in saying that there are no engines in England, except Cornish engines, doing this amount of work, with 12 tons of coal in the 24 hours.

Mr. Cope Pearce thinks an objection to the bucket-pumps is that the rods are out of sight; and this is true to some extent, but he must know that every time the bucket is changed the nuts, if anything is wrong, are on the top of the lids. Buckets are much handier than plungers; they take up less room, and are simpler than forcing sets. I cannot see how the want of balance-bobs throws any more weight upon the beam. The balance-bob is to the Cornish engine what a fly-wheel is to a rotary or winding-engine. No mention is made of the "travelling suction" for sinking. If the size of the pumps are under 18 inches, this is an admirable contrivance; the pipes are generally made 11 feet long, and are telescopic, so that when run out there is room for putting in a 9-foot pipe between the bucket-door and the next pipe above it, so that instead of having to lower all the set, and put the new pipe on at the top, it is only necessary to lower the bucket-door, working barrel, slack-seat, and suction. Wooden bucket-doors are much lighter than cast-iron ones, but they are very seldom used now; the screw and chain make the door easily handled. There is no reason why they could not adopt the Cornish engine in Newcastle; but is only within the last 10 or 15 years that the North of England are becoming alive to the fact that economy of fuel means economy of life of the engine and boilers, as well as economy of coal; and, no doubt, they will come into it by-and-by. We must give them credit for what they have done, when they had nobody to copy from.

The Newcastle winding-engine is direct acting, the winding-drum is on the crank-shaft, and of its kind it is a very useful engine. It will wear longer than any other engine. By the way, we cannot copy winding-engines from Cornish practice; the Cornish winding-engine is a sorry affair; either it has been copied from Staffordshire practice, or Staffordshire from it. It is a mistake to say that there is no provision made to throw the plug-rod out of gear in those engines; this is very effectively done by the brakeman, as anyone may see by watching his movements. It is merely necessary to keep the handles from flying up or down when they are thrown out of the catch, and is a far better mode than with the joint on the handle. So long as engines are direct acting without gearing, so long must the speed of the piston be slow. I rather think it would be a mistake to go to small drums; the better practice would be to have gearing and much larger drums, driving by small engines going at a great velocity. The drum might be (say) 30 or 40 feet diameter, caged on one side, and the small engines working at it. In this way, also, the very heavy shafting might be dispensed with, and the wheel hung like a water-wheel. You might thus obtain great speed in winding, with great command, and the least possible weight. It is not difficult to see that, if a drum be 20 feet in diameter, or, in round numbers, to be raised 10 fathoms for each stroke of the engine, it will require much greater care and attention to prevent overwinding than if the engine made 6 or 8 strokes for one revolution. It has often occurred to me that the safest and quickest way of winding coal would be either to adopt this plan, or to have a cylinder of (say) about one-sixth the length of the pit, with drums so proportioned that the cage would ascend by one stroke of the (open topped) piston. Double cylinders and link motion are decidedly preferable for winding, as far as stopping and reversing is concerned. Horizontal cylinders wear, and although a vertical cylinder thirty years old may be found winding away, I do not think that a horizontal cylinder would live as long. There is an objection to the link motion. Suppose anything to go wrong with any of the pins or rods or connections of the link while the engine is drawing a cage up the pit, the engineman is helpless; he can do nothing but shut off his steam and hold his brake. There is a safe rule in the Newcastle mines, that an engineman must hand his engine, and go at half-speed with men. He cannot hand the link motion.

A BRAKESMAN.

PREVENTION OF ACCIDENTS FROM OVER-WINDING.

SIR.—Observing in your report of the meeting of the South Wales Institute of Engineers that a paper is to be read by Mr. W. Fairley, of Swansea, upon the prevention of accidents from over-winding, it may not be uninteresting to the readers of the Journal to remind them of what has already been done in the same direction. There are many, no doubt, who still maintain that it is preferable to rely upon the skill of the engineman, and, for my own part, I would quite as readily trust myself to a good man as to the most ingenious safety apparatus that could be devised; and in nine pits out of every ten I should have no fear in travelling up and down as often as any working collier, although neither safety-catches nor apparatus to prevent over-winding were used. But it must be remembered that there are carelessly managed pits, and at these the use of safety apparatus is absolutely indispensable. We may, therefore, enquire what general principles are involved in the construction of the several contrivances. They appear to arrange themselves almost naturally into three classes, the first comprising those which aim at detaching the cage before it is drawn over the head-gear, and relying on other arrangements to prevent its descent into the shaft; the second, those which make the ascent of the cage act upon the engine direct; and the third, which I think is represented by a single invention, which provides that in the case of over-winding the entire head-gear shall be removed from the shaft. Of the first two principles there are many modifications, but I am not aware that the third has ever been really practically tested.

Amongst the inventions of the first-class, the invention of Mr. R. Aytoun is undoubtedly the most valuable: it is at once simple and efficient—the whole apparatus, both for preventing over-winding and for arresting the descent of the cage, can be made in any smith's shop, and would not cost 10s. His safety-catch is no more than a horizontal bar with two studs on it; his safety-hook simply three pieces of steel-plate properly slotted, so as to form a place to hold the cage-hook whilst all is going on well, and to open and drop out the cage-hook when through over-winding the plates are drawn through a ring suitably placed. For the information of those who may desire to introduce this catch, it may be stated that all that is necessary is to take a bar of sound iron, say 4 inches wide, and of a length equal to two-thirds of the breadth of the cage. Now, if one end of this rod be placed flush with the end of the frame of the cage, and it be fixed to the cage by a pin, there will be formed an ordinary lever; at the outer end of the cage a stop is placed to prevent the lever rising above the horizon. The next thing is to put studs on the lever, so that they may be 'ust on each side of the guide-rods. Of course, there is a similar contrivance on each side of the cage. The cage is suspended by four chains in the usual way, except that two of these chains are attached to the outer end of the levers instead of to the cage.

It will be readily understood that by this arrangement the cage will run free of the guides as long as the winding-rope is tight, but if it slacken, either from breakage or otherwise, the whole weight of the cage will be applied to force the studs against the guides, and its descent will, of course, be at once stopped. As to the apparatus for

preventing over-winding, it consists of three plates, the two outer of which are of the form of the isosceles triangle, and have vertical slots in the lower part; the third, or inner plate, forms a kind of hook, which closes the lower end of the slots in the outer plate, the upper end of the hook-plate is also oblique, so that when the apparatus is pulled through a ring (which is fixed in the head-gear), the slots are opened, and the cage-hook falls out. To keep the slots closed while the work is going on properly, Mr. Aytoun fastens them with a soft metal bolt, which is easily cut through when the plates are drawn against the ring. A cheaper and more efficient contrivance than this it is difficult to conceive.

As to the contrivances for cutting off the steam from the engine, applying the brake, and thus stopping the cage by automatic arrangements, they are at best but of doubtful utility, as they are all necessarily so complicated as to be very liable to get out of repair, even if their existence did not materially interfere with the freedom of the engineman to work—the effort should be to lessen the number of parts in the engine, rather than to increase them, especially by connecting the steam-cocks with the pit head. I do not think that the proposition has ever been put into practical operation at a pit, although I think it was an engineman from whom the suggestion first emanated, nor am I aware that there is any patent bearing upon the subject. But the invention of the third class to which I have alluded is that of Mr. George Addenbrooke, whose address I cannot at the moment recollect, but I believe that this, in connection with a good disconnecting hook, is the plan which will ultimately be general. Mr. Addenbrooke proposed to make the entire head gear moveable, on a hinge upon the side nearest the engine, so that in the event of over-winding the whole structure was overturned, and the cage landed some distance from the mouth of the pit in safety. But, according to Mr. Addenbrooke's arrangement, the cage was not very likely to remain there, as in another moment it would in case of continued inattention on the part of the engineman be subjected to another jerk. This defect, however, is one which is easily remedied by providing a detaching hook, and the men would then in case of accident be left in safety after the head-gear is pulled over, however long the engine might be left running. Then, again, Mr. Addenbrooke proposed to steady the head-gear whilst all was going on well by simply giving the back legs of the gear, but I think it would be an improvement upon this if the front legs were fastened by a soft bolt, as in Aytoun's disconnecting link, the cutting plates being placed two on the legs and one on the stand, or *vice versa*, as preferred. This is an invention which is at least worthy of trial, and probably Mr. Addenbrooke would not object to give a more detailed description of it.

Sept. 4. H. W. V.

—all these seemingly opposite conditions were fulfilled most perfectly. In the presence of the judges a person who had never before experimented, to determine how quickly the operation could be performed, withdrew one drill, and inserted another in 40 seconds, and, with practice, the change of a fresh point for a dull one could readily be effected in half a minute. The award of the judges was the highest premium authorised by the society, but, not regarding this sufficient, it is understood that they unit in a declaration of the superiority of General Haupt's machine over all others known to them. This must be the more gratifying to the inventor from the fact that one of the judges (Dr. Foster) had been sent by the society to visit all the localities in Europe where machinery had been used to facilitate mining, and his report, with that of Mr. Charles Fox, was full and exhaustive, giving the results of every known attempt to facilitate mining operations by mechanical appliances, and illustrated in each case by complete drawings, models, or working machines. Dr. Foster, moreover, was one of the jurors at the Paris Exposition, and, although young, is regarded as one of the most accomplished mining engineers and geologists in the kingdom.

One of General Haupt's drilling-engines, with the momentum feed, is on exhibition at the Paris Exposition, and has been awarded a medal; but the present screw-feed is vastly superior, and would seem to be the perfection of a feed movement. The drilling-engine weighs but 125 lbs.; its extreme length is about 30 in.; width, 6 in.; and height, 8 in. It is mounted on two hollow iron columns, 4 in. in diameter, which, in driving a tunnel, heading, or level, are firmly and expeditiously fixed against the rock at the top and bottom, and in sinking shafts, at the sides. The adjustments are made by keys. Four keys clamp the drill to the columns; they are loosened each with a tap of a hammer, when the drill can be pointed in any direction, and again clamped in the same manner. In changing the direction of the drilling-tool it is not necessary to turn a single screw, and all the keys are so secured that when loose none can drop out of place.

Some of the most important advantages which this machine possesses over every other previously invented for mining and tunneling consist in—

1.—The position of the drill cylinder when working, which is within a few inches of the face of the rock, leaving all the space in rear entirely unencumbered for the removal of material.

2.—The columns, on which from one to four drills may be mounted, stand on a base of only 8 in. diameter, and, with this exception, the floor is entirely unencumbered. As a consequence, the drills can be erected and the work resumed immediately after a blast, without in any degree interfering with the removal of material. Instead of blasting only two or three times per day, it should be possible, with the facility thus afforded, to blast at intervals of about two hours, and the progress is in proportion to the number of blasts in a given time.

3.—The drills are inserted from the rear, not in front, of the machine; each acts independently of all others, and one drill can be removed and another inserted without stopping any other machine, in a period of time not exceeding half a minute.

4.—Mobility, with stability, and celerity of adjustment.

All these advantages are peculiar to General Haupt's drill and mode of mounting, and not one of them can be claimed for any other.

We are informed that Mr. Loam, of the United and Consolidated Mines, and other engineers of eminence, noted for their practicability and experience, who were present at the experiments at Falmouth, have expressed themselves as entirely satisfied that there is no practical difficulty in the way of the introduction of this machine, worked by compressed air, into Cornish mines, and there can scarcely be a doubt that the whole system of mining in Cornwall and elsewhere is about to be revolutionised.

General Haupt was requested to address the Miners' Association of Cornwall on Monday last, and for the valuable information which he communicated the thanks of the Association were voted. At the invitation of Sir William Williams, who presided at the meeting, General Haupt accompanied him to inspect the United Mines, and make an estimate of cost of air-compressor, receiver, and a sufficient number of drills to test their application to the work. The whole cost did not exceed 200*l*. A slight modification in the mode of mounting is sufficient to adapt the machine to open quarry work and rock excavations, and a number of small cylinders can be mounted on a frame for drilling, at the same time, a dozen or more of the small holes required in splitting granite.

J. A. M.

THE PROGRESS OF MINING—AS A SCIENCE, AND SOURCE OF COMMERCIAL WEALTH—NO. XIII.

SIR.—It can hardly be doubted that the greatest enemy to mines is the miner himself, including those who pretend to support him. By the miner I mean the practical miner, and by the supporter I mean those who ought to supply the capital and discretion for managing the monetary affairs of mining companies. If any corroborative evidence were wanted to prove that Nature has been universally bountiful to man in filling the metalliferous veins, whether with copper, tin, and lead in this country, or with gold at the Antipodes, the proof will be found in an excellent pamphlet published by Mr. R. L. M. Kitto, M.E., and entitled "The Gold Mines of Victoria," &c. Mr. Kitto says (page 47)—"In a country like Victoria, possessing agricultural lands second to none in the world, vast areas of pastoral land, where flocks and herds are easily raised, and where capital increases while the investor is asleep; in a country where the vine flourishes to perfection, and fruit trees grow as, perhaps, in no other part of the world; where on the tops of the vine-clad slopes the golden ores are spread over an area bounded only by the extent of the colony. In a country larger than Great Britain, possessing such resources, owned by a population of only 600,000 souls, need one wonder that the best only of this wealth is culled, and that only here and there are portions of the golden treasure exhumed?" Mr. Kitto says (in page 50) "The quartz mines of Victoria are not well managed, yet the result of mining for gold in quartz reefs, which, in other words, means gold lodes, is, in the aggregate, infinitely better than from the alluvial workings. I find from the Government statistics that during the year 1866, 55,916 persons were engaged in alluvial mining, and 14,878 in quartz mining. The result is that the earnings of the alluvial miners average 66*l*. 4*s*. 1*d*. for the year, and those of the quartz miners 132*l*. 17*s*. 4*d*. for the same period. It must not be forgotten that 20,100 of the number of the alluvial miners are Chinese, who are content to work for a few shillings weekly. This abstemious but industrious race work the shallow alluviums after they are abandoned by the European miner, and also in many instances obtain a living by sweeping the roads, which have been macadamised with quartz metal, in order to obtain thereby the stray particles of gold that may have been separated by the crushing of the heavy traffic." "I am certain," adds Mr. Kitto (p. 51), "that quartz is engaged in working reefs known to contain gold realise 4*s*. per man per annum. The wages of the hired miner range from 1*s*. to 4*s*. per week, or an average 2*s*; thus giving exactly one-half of his labour to meet expenses of wear and tear of machinery and the payment of dividends, the proportion in favour of the capitalists will be increased to a large extent when the mines are systematically worked. Of 30,345 square miles in any part of which there is a possibility of remunerative gold deposits being found, only 869-17-40*s* square miles, or about 1-33*s*, have been mined upon, and only about 1-200th part of the whole auriferous country was occupied at the end of 1866. On the quartz lodes, for instance, only such portions as are near the outcrops where the auriferous stone was discovered at the surface are occupied. These reefs, or lodes, may be traced many miles, and, as the shoots of golden stone run pretty regular, it only requires capital to open up mines of wealth equal to any yet opened. The present market value of the claims on the gold fields is 8,987,067*l*. sterling, and the worth of the machinery is estimated at 2,068,527*l*. sterling, making a total value of the mines and machinery at the present hour of 11,055,594*l*.

The yield of gold for 1866 was worth 5,916,799*l*. of which amount 4,077,197*l*. 18*s*. 4*d*. was the produce of the alluvial gold, and 1,839,581*l*. 1*s*. 8*d*. from quartz. The average yield of gold from the quartz crushed in the colony, as per Government returns, is 11 dwts. 22*s*. grs. to the ton of stone. The cost of raising and crushing quartz, together with the cost of management, from an averaged sized reef, or lode, (say) from 4*f*. to 5*f*. thick, will be about 13*s*. per ton, at 300 to 400 ft.—that is, from 50 to 60 fathoms from the surface. Taking the above estimates

as a basis, I find that with the average yield of the colony—10 dwts. [16 grs., or about 43s. per ton—the actual profit on working gold quartz mines would be 30s. on every ton of quartz crushed.” In another paper we shall show how splendid results are marred in Victoria as well as in this country by financial manipulation, and how good properties are brought to ruin.—*Sept. 3.* —— M. F.

THE MINERAL RESOURCES OF RUSSIA, AND THEIR DEVELOPMENT.

SIR.—In last week's Journal there appeared an interesting account of the “Coal Beds of Russia.” In the latter part of the year 1856 I examined some important and extensive districts of Russia in reference to the great railway undertakings which were at that time in contemplation, and I was very much surprised to find so very little active enterprise, and the dogged adherence to the most expensive and unscientific mode in which every operation was being carried on. The Government officials appeared afraid to suggest any improvement, however obvious and however advantageous to the public service such improvement might be. From the immense resources of Russia, agricultural and mineral, and in consequence of the great area of surface over which these undeveloped resources are spread, I perceived at once that however extensively railways may be introduced into Russia they must be largely supplemented, in some cases probably by cheap narrow gauge railways, but principally by trams. In order to meet the wants of important districts which can never be reached by railways, I made the accompanying comparative statement, and sent copies to some of the Government officials, without effect:

RUSSIAN RAILWAYS AND TRAMWAYS.

COMPARATIVE MERITS.

RAILWAYS. TRAMWAYS.

1.—There are few districts of considerable extent in which a double line of railway, with the necessary stations and plant, can be constructed for a less sum than 18,000/- per mile.

2.—A single line of railway is very liable to accidents, notwithstanding the greatest care in its management.

3.—To construct a railway, with bridges and earthwork, for a single line, and subsequently to double the line, is injudicious in an engineering point of view, and by no means economical.

4.—To form the bridges and earthworks in the first instance for a double line, with permanent way and plant for single line, leaving only the permanent way of the second line to be laid subsequently, if ever required, is injudicious in an engineering point of view, and by no means economical.

5.—For the proper development of railways in Russia nearly all the labour is working the lines, as well as in the manufacturing and repairing establishments, must be skilled labour of the highest class, and for many years principally imported, and consequently expensive.

6.—The great national advantages to Russia of a well-devised system of cheap communication is principally for the development of the great agricultural and mineral resources of the country, and in very few cases for the accommodation of passenger traffic. The economic speed for heavy goods traffic on railways is from eight to ten English miles per hour.

7.—Descending planes, where gravity will give the necessary velocity to a train, of very little, if any, advantage to a locomotive line.

8.—The cuttings on railways require great labour to keep them clear of snow in winter.

9.—Fuel for locomotives is very scarce and dear, and if wood be used for an extensive system of railways, that article, necessary to the very existence of the inhabitants during their long and intensive winter, would be seriously diminished.

10.—It takes considerable time to existing traffic into a new channel, and to create traffic which did not previously exist, consequently to employ a system calculated for the highest development of traffic is, to say the least of it, very injudicious.

11.—To come from a railway to a railway, where the traffic proves to be sufficient for a railway, would be contrary to the law of progress, and discouraging to the progress of the railway.

The great object to be aimed at is the development of the greatest amount of traffic at the least possible expenditure of capital, and to extend the advantages of cheap internal communication over the greatest possible extent of surface, and more particularly so in an extensive country like Russia.

There can be no doubt but the present Emperor is fully alive to the development of the resources of the country, but he is so hedged in by slow coaches that it is difficult, if not impossible, to obtain permission to lay any project before His Imperial Majesty, however advantageous to the country such a project might be. The district from Nijne Novgorod, through Kazan and Perm, to the Ural Mountain range would pay a high percentage on a cheap tramway, but would not pay the working expense of a railway. Many other important centres of commercial enterprise, such as Saratoga in the Volga, might be mentioned which would soon grow into importance when supplied with an efficient means of communication to various outlets for trade.

ALEXANDER DOULL,
Institution of Civil Engineers, Great George-street, Westminster.

SUCCESSFUL MINING ENTERPRISE—NEW MINES.

SIR.—From the gradual improvement in the price of copper and tin, attention should now be paid to the discovery of new mines, particularly as labour is at present abundant, machinery and materials are plentiful and cheap. A few small companies, to the moderate amount of about 150,000/- to 200,000/-, would not be felt from the amount of spare capital laying unemployed. This sum extended over a period of two years, would, I doubt not, be well rewarded, and provide a vast amount of useful labour. This sum would, I sincerely believe, be equal to ten times the amount now laying out in foreign mining and other speculations, and, in well-selected districts, lead to the discovery of immense deposits of mineral. Many have suffered from rash and impudent speculations; this will always occur, and the great danger of suppressing the spirit of enterprise too long, waiting any sudden spur of success. Then follows, as is always the case, many improvident speculations; the most unlikely adventures are immediately taken up and launched, because the property is near some place of access, or called by a similar name. Mineral leases, particularly in Cornwall, can now be obtained on very liberal terms. The landowners see the necessity of encouraging enterprise at home, so as to enable British enterprise to meet foreign competition; but the fashion has been to bring out companies, charging 50,000/- for the grant of the concession of mineral properties abroad, and then 1,000,000/- sterling required to prove whether the property is valuable or valueless, as far as regards a commercial enterprise. Ten companies of 20,000/- each, payment extended over from two to three years, investors could then make their arrangements according to circumstances; this would be a safe enterprise, and by dividing the chances there is scarcely a doubt of success, judging from the events of past years. The evil companies brought out on the misrepresented word *Limited* has

been that half the capital has invariably gone in preliminary and other expenses; the poor mines suffer all the blame, whether justly or otherwise. Which system has paid the best, moderate or gigantic concerns, as a speculation generally? AN ADVENTURER, Cheltenham, Sept. 3.

HISTORY OF MINING—No. X.

SIR.—In my last letter I endeavoured, in the interests of mining, and in the general interests of commerce and politico-economic progress, to show the influence which mining has had upon the prosperity of ancient and modern states, and upon that of Great Britain particularly. It is the more important that this subject be pursued, with your kind permission, in your columns, as the despondency which for so long a time pervaded all connected with mining is giving place to a more healthy feeling. This is the case in every branch of metallic mining; and in almost every department of minerals there is improvement. Seasons of depression ought not to daunt the spirit of enterprise, nor depress the sanguine into the despairing. Business in every form must fluctuate with the influence of political and social occurrences, with the discoveries of science, of new material for commerce, and new regions worthy of development. The value of British tin and copper has risen, and is likely to rise, in the British market, for whatever the importation of those metals, there will of necessity be a demand for the products of British mines. The late season of depression has not been the only one known in our times, and as former periods of reverse were succeeded by highly favourable reactions, so will it be now that the tide has turned, and the flow is seen where the ebb so lately left its trace. The copper standard was actually lower eighteen years ago than it is now. Taking the last fourteen years in comparison with the fourteen which preceded them, the phenomena presented are favourable to the years more recently past. From 1838 to 1852 the copper standard was lower than during the last fourteen years, or the fourteen years which preceded 1838. Thus, periods of revolution and reaction must come, and it is the investor's duty to expect the like, and to remember that mines are solid investments, which always yield valuable products, unlike the perishable commodities in which commerce so extensively deals. The investor should also remember that gold, silver, tin, copper, lead, and iron do not go out of fashion, as is the case with numberless other articles of use. A time will never come when the great metals the employment of which underlies all commerce shall cease to be in requisition and cease to be prized. Indeed, it is a remarkable thing in the present age, more so than it has been in any other, that where metallic treasures are discovered or developed, the country becomes more rapidly populous, powerful, wealthy, and civilised than any other. How strikingly this has been the case in Britain during the last half century. What but the mineral resources of England could have given existence and stability to nearly every other form of her industry—one might almost venture to say absolutely every other form of her industry? How is it that Lancashire and Cheshire are made rich, populous, and famous by making into twist, or wft, or cloth, the cotton which these counties do not produce, but which was cultivated on the banks of the classic Nile, in the lands, European or Asiatic, of the Ottoman Turk, farther away still, in Southern Africa, on the irrigated lands of Eastern India, in Australia, or in the Western Hemisphere by the hand of the slave? All these remote countries send hither their agricultural products, and receive them back manufactured into cloth and garments by our hands, because we have mines and miners.

Let anyone go into the great cotton factories of Manchester, Salford, Oldham, Stockport, Ashton, Preston, or Wigan, and he will perceive, if his observing faculties be not obtuse indeed, that, wherever the material in process of manufacture has come from, all the movements and life of those hives of industry spring out of British mines. Mark the snorting steam-engine, which like the eager horse expresses in its own way the power it exerts—that engine is made of British metal; the power which creates the steam it is an instrument in using is mineral—the product of our northern coal fields. Stand apart, and take a comprehensive view of those apparently innumerable wheels—some vast, some marvellously minute, all whirling with ceaseless rapidity—and those stirring spindles, they came from our iron fields. Behold the leaden pipes, the steel and copper “reeds,” the brass and tin joints and sockets, and receptacles for oil, and “dressing;” these are the products of Cornwall, Devon, Cardiganshire, and Stafford. It is the miner that had the first hand in all this perpetual and wealth-creating motion. The cotton lord may be a great man, but without the Lancashire collier, the Cornish copper miner, and the Staffordshire iron-blaster, his engine would cease to lift the huge cranks, there would be no wheels to set the music of the rattling looms, and his stores of cotton would be idle, or be turned to unprofitable use. In like manner let any observer look at the silk manufactories. That silk comes from the South of France, from Italy, from China, wherever the mulberry tree, and the worm that secretes from it the cocoon, are found. England produces no silk, but by the application to the produce of other lands of her vast mineral resources she sends from Spitalfields, Coventry, Macclesfield, Leek, Manchester, and Dublin the most elegant material which graces the forms of beauty. Again, there are the West Riding of York, with its vast steam power, and ever-increasing mills; and the woollen districts of the West of England, from Frome to Kidderminster. The sheep of the British Isles can give but a small portion of the wool which is made into worsteds, broadcloths, and carpets in those wealthy and populous districts. It comes from Germany, Spain, Australia, &c., because the English miners enables it to be here manufactured into valuable commodities. If the numerous dye yards and print works in England and Scotland be visited, the observer will soon learn that there also the miner is at the root of all, not only supplying the material for the machinery, but a large portion of the most beautiful dyes, by which the cloths are impressed with patterns of ornament. The hosiery of Leicestershire, the laces of Nottingham, the lawn, muslin, and cambric of Blackburn and Bolton, the shawls of Paisley, the tabinets and bombazines of Dublin, the linen and diaper of Belfast, Londonderry, Coleraine, and Dundee, with many other textile manufactures flourish, because our mineral resources and mineral enterprise flourish. It is altogether to the development of its mineral wealth, and the energy of its miners, that South Wales has become so much more prosperous in the present generation than it had ever before been, and it is one of the aspects of the times favourable to the mining interest that the demand for coal and iron in the Principality is now increasing. There is a steady advance in shipments of iron for foreign parts. The tin-plate makers, it is good for Cornwall to know, are busier in the South Wales district than they have been. Coke, charcoal, and anthracite are in demand for home consumption and for shipment, and the silver-lead mines of Cardiganshire are prosperous and promising, employing many of the people.

The impetus thus given to the mining industry of Wales, especially of South Wales, has shown itself within the memory of living men in an absolute transmutation of the appearance of the country. Merthyr Tydfil has become an immense centre of labour, Swansea and Newport large and enterprising ports, and Cardiff is advancing in population and business, proportionately, as fast as any port in Great Britain. It is to its mines, and their skilful and enterprising working, that South Wales is indebted for its rapid progress. Scotland during the last century was as proverbial for its poverty as Wales, it now pays a larger revenue than Ireland, and about one-tenth of the revenue of the United Kingdom. This improvement is to be attributed to its mining achievements. The mills and print-yards of Western Scotland, like those of England, are set going and sustained by the mineral resources in their neighbourhood. So is the shipbuilding on the Clyde, as well as in England upon the Tyne, the Mersey, and the Thames. It is alleged that about seven-tenths of the working population of the Lowlands of Scotland live by working in mines, and by working mineral products. In the eastern district of South Scotland there are 274 collieries, yielding 6,400,000 tons; in the western coal district there are 223 collieries, yielding 6,250,000 tons. Cannel and Boghead coal have been developed in Scotland with rapid increase. There are about 150 furnaces in blast, yielding nearly 1,250,000 tons of pig-iron. The ironworks of Scotland are more important than those of any other portion of Europe, except England. Much of the increased wealth, population, and shipping on the Clyde and Forth are due to the progress of Scottish mining. Before

the grand development of mining property in Scotland the population hardly exceeded 3,000,000, now it is more than 4,000,000. In its mines Scotland had a noble source of supply for its people, and by working them with energy and intelligence, the population, property, and power of the Scotch people have been largely promoted. Thus wherever mining has been supported by capital in Great Britain the people, and the means of supporting the people, have multiplied, the national revenue has been augmented, the raw materials of all nations has been made up into useful articles by our people, our ports have been filled with shipping, and civilisation in all its forms has been advanced. I dare not trespass on your space in this letter, or I could show you that it is as true of all other places as it is of Great Britain, that mineral resources, spiritedly worked, lay the foundation for the growth and greatness of communities.

I shall just venture to select a few instances illustrative of this truth. New Zealand is the most recent of our Australian fields of mining enterprise. That colony, for various reasons, advances slowly, but as soon as mineral productions were found there, notwithstanding the formidable disaffection of the natives, population increased, the value of land rose, and public enterprise imbued a new spirit. By the finding of gold in Otago, iron-sand in Taranaki, and other important discoveries not yet brought out so fully, the colony has put on a new life. According to the *New Zealand Examiner*, since the gold discoveries of 1861 in Otago more than two millions and a quarter ounces have been exported to England—this year already about 75,000 ounces. According to the same authority, population and property are making rapid strides. The extraordinary progress in people, cities, commerce, and wealth of those regions of the United States which lie upon or near the Pacific towards the south-west frontier, exemplify also the influence of mining upon the foundation and fortunes of states and territories. It cannot be pretended that the progress of California and New Mexico is to be attributed to anything else than their mineral resources. The history of Colorado, Nevada, and other portions of that region of the United States, would in the most striking and interesting manner prove and illustrate my assertions. Gold, silver, lead, copper, iron, coal have been found in great abundance in Colorado, and the result is that where the savage roamed the miner has in a few years created cities and civilisation. Nevada is not yet adequately explored, but her yield of silver is extraordinary, and there, also, the miner has moved the wigwam out of the way of the city—the white man displaces the red man, and the sound of the implements of civilisation has succeeded to the wild war-whoop or hunting cry of the Indian. In other letters I shall be happy to give a more detailed account of the progress of colonies, territories, and civilisation as the result of mines and miners.

Gresham House, London, Sept. 4.

THOMAS SPARGO.

EAST WHEAL NEPTUNE—GREAT WHEAL NEPTUNE LODE.

SIR.—The attractive news from East Neptune will, we hope and believe, be fully borne out by the result of practically mining this discovery, after examining the rich specimens of solid light grey ore broken from the point where the face of the lode has been cut into northwards for a space of 18 inches, and finding inside this course of grey ore a course of rich malachite and fine gossan. It can hardly be imagined in such a district but that this is the commencement of the opening of a great mine. One rich mine profitably developed here will soon set going Wheal Caroline and other mines on the north-east branch of Great Wheal Neptune adit, and, probably, bring back that prosperity which, for a season, seems to have abandoned the western mines. Capitalists will do well to mind the signs of the times; the old proverb says “It is never darker than a little before day.”

COPPER MINER.

SLATE TRADE IN NORTH WALES—No. IV.

SIR.—In this communication I would invite attention to a class of work connected with quarry operations which is looked upon too generally as one which requires but little, if any, ingenuity on the part of the workmen—I mean the duties of a “rockman.” The great secret of quarrying the slate blocks *sizeable* and *sound* ought to command a larger share of attention and forethought than is usual even amongst those to whom that task is assigned. Great recklessness is often found, both amongst managers and men, in opening and removing beds of slate rock. By them the subject of economy and frugality is but little heeded; and, as a rule, but one only out of every four of the rockmen is to be found who studies lessons from the book of Nature. Therefore, without using the strictest vigilance, and observing the most rigid scrutiny, great waste must ensue. After a quarry has been sufficiently developed to set bargains for slate making, the *first* consideration should be the proper place to *commence* operations, which, of course, the agent is supposed to know. A mistake here will result in disaster. Ignorance and perverseness, unrestrained, are invariably attended with wanton improvidence on a large scale. It has cost the rockman many years of incessant application and labour in order to qualify himself for discharging the duties of an efficient workman, whilst his fellow-labourer has received an equivalent in the shape of wages, without improving his acquaintance geologically, or taxing his faculties for the purpose of enabling him to make a corresponding return to the employer, agreeably advantageous.

Some parties imagine that boring and blasting are about all that is required of a rockman, and that any ordinary labourer can acquire sufficient knowledge of these for all purposes in one month. Very strange deduction this, especially coming, as it often does, from men of learning in other sciences. Equally erroneous is the idea that a scholastic can become, in the course of a few weeks, possessed of the ABC of all the essentials for the working of a slate quarry successfully. It is now pretty generally conceded that to obtain a knowledge of any art or profession requires not only fortune and years of time, but indomitable perseverance and an intellectually retentive memory. This being so, what foundation is there for any person to infer that geological problems can be known intuitively, or that, because a man is possessed of the art of writing and spelling his own language correctly, or has made himself proficient in mathematics, &c., he can, therefore, quickly master the more easy (?) rules applying to the manufacture of slate, instruct the artisan, and wisely direct all the machinery? The great misfortune (need I add) has been the sole control of this enterprise by totally unqualified agencies.

I have before remarked that the “proper plan to begin operations” on commencing the manufacture of slates is the first subject requiring attention. A superficial survey of external facilities will afford the agent but little assistance in arriving at a proper decision on this subject. Book knowledge can do but little to aid him in this intricate work. Scientific theories fall short, plodding and the most clever acuteness are inadequate. Who, then, can be sufficient for the emergency? The answer is simple. Who ought to be the most likely person? Beyond question, the man who has kept a record, during his servitude, of all the *laws* and *rules* as furnished him by Nature throughout the transitional changes so common to this deposit. The ever-occurring dissimilarity in the facilities for removing the slate “blocks” from their bed makes it necessary that the “rockman,” especially the manager, should be well posted in the laws of relationship existing. His intimate knowledge of these matters only can assist him in rightly laying open the vein, with a view to render it profitable. How many slate quarries there are that have been opened at the wrong end, and no wonder, considering the *abilities* of the parties to whom the work has been confided. The greatest marvel is that *authorities*, in their right mind, should place such men in command, and furnish them with the means of carrying on their impolitic and wasteful adventures. I wish it to be understood that I am not referring to any *particular* persons, as there are many who are implicated, and who are better known to the arbiters of finance. Some *party* interest in the speculation is often the cause of their continuance in office. A great pity, indeed; but is there no remedy? Do the “Articles of Association” bind this insufferable burden on the shareholders? Is there no way of adjusting the terms imposed? Is the company doomed to undergo the trouble of “winding-up,” a *really legitimate concern*, or succumb to the alternative—to pass through the painful excration of bankruptcy? To save trouble in cases of this kind, allow me to suggest an unreasonable yet *profitable* antidote, if perchance you may succeed. Pay the *incompetent* managers to stay at home, or, at least, to desist from further interference in the management of the quarry. Depend upon it the tables would soon be turned in favour of the exchequer. The monthly meetings of the

directors thenceforward would pass off with an increasing interest, soon to be succeeded by a "dividend" to cheer, instead of a "call" to annoy. With the right man in the right place, the directors can, without being led astray, or doomed to disappointment, look for results corresponding with the representations set forth in the monthly reports, instead of the old *threadbare excuse*, in all its magnitude, "unforeseen circumstances have prevented," &c.

I purpose in my next letter to describe a few of the lessons which should be carefully studied by every person aspiring to the management of a slate quarry. The same subject may be studied with advantage by the "rockmen," so that they may render their services (at good wages) both economical and profitable to the proprietors.

Tremadoc, North Wales, Sept. 4.

JOSEPH KELLOW.

MINING IN WALES—CAPT. KITTO AND CAPT. RIDGE.

SIR.—Being a constant reader of the Journal, I have observed lately a good deal about "Mining in Wales," especially in the district of Llanidloes and its vicinity. In the two last numbers there is great reference made to Capt. J. Kitto with regard to his management of mines in the Llanidloes district. May I ask what he has done? and especially may I ask what he has done at the Central Snailbeach Mines, Shropshire, so that much should have been said about it, and when that mine is to exceed the Old Snailbeach Mine in value? And I ask, without prejudice, what he has done in the Llanidloes district to award him so much praise. I always say give praise to whom praise is due. I never wish to mar the character of anyone, yet this I know that Capt. J. Kitto came to Wales as successor to an eminent, skilful, and practical lead-miner, and well known for his knowledge of mining in its respective departments; one who courageously opened his purse to assist his brains in releasing Brynpostig Mine out of Chancery, effectually supervised it, and made every discovery of lead that is now extant on that mine, although he had many obstacles to contend with. That gentleman is no other than Capt. Samuel M. Ridge, of Llanidloes; the very person who obtained a lease of Brynpostig for 21 years, and who has not yet transferred the original to the present company.

Having read in the Journal so much about Brynpostig and Mid-Wales (formerly called Cwm Fron), associated with the names of Captains J. Kitto and Mr. Job Taylor, of Dudley, I think those gentlemen—indeed, all concerned in the two mines—should at least have spoken of or to Capt. Samuel M. Ridge, of Llanidloes. It is, indeed, said that large amounts of lead were sold by Capt. S. M. Ridge; and it is true he made some returns from Cwm Fron Mine; but when Capt. J. Kitto states that "the deep adit at Cwm Fron has been driven for about 100 fms., and that at least half that distance had been grey ground," they should all consult Capt. S. M. Ridge, as he is the only person that drove through the grey ground in the deep adit and elsewhere in Cwm Fron, now called Mid-Wales, from whom those interested can elicit the truth. I hope in the driving of the deep adit that the lode is not too large to be lost since Capt. S. M. Ridge ceased to breathe in the mines.—Llanidloes, Sept. 2.

ALANIDLOES GLEANER.

THE SOUTH WALES INSTITUTE OF ENGINEERS.

SIR.—I perceive from a letter in last week's Journal that Mr. Lionel Brough takes exception to certain portions of the report of the late meeting of the South Wales Institute of Engineers, held in Swansea. Possibly a few inaccuracies might occur, but after having again carefully perused my notes, I do not think they can be of any special moment. When it is considered that the whole of the discussion was carried on in the most technical language, that Mr. Brough was, as he himself states, suffering from severe sore throat (which, in some instances, prevented his remarks from reaching the reporters); and, lastly, that there was no accommodation whatever afforded the representatives of the press (who were, therefore, compelled to scribble their hieroglyphics on their hats as best they may). When, I say, all these things are considered, I believe even Mr. Brough will agree with me when I say the great wonder is that the report is so accurate as it is.

The most serious objection taken by Mr. Lionel Brough is in reference to the after-dinner remark, in proposing the health of the President, when he is made to say in the *Mining Journal* "that he (the President) would be equally esteemed in the other world, if he were only known there." Now, Mr. Brough seems to think this expression conveys the idea that he was speaking lightly or triflingly in reference to subjects of a serious or sacred character. But, Sir, I do not think that any other gentleman—either anyone who heard the remark, or anyone who might have seen it in print—would take the same view of the matter as Mr. Brough has. He has drawn an inference not warranted by the expression used. I believe the identical words used were—"I have to propose the health of a gentleman whom there is no one more esteemed in this Welsh world, and who if he were known in the other world would be equally esteemed there—I mean the health of our esteemed President." I think the obvious—in fact, the only—inference fairly to be drawn from this expression is that by the "other world" is meant that which is not the "Welsh world"—the English scientific world, and that consequently there was nothing irreverent expressed or implied in the report. I think this explanation only fair to Mr. Brough, and also to

YOUR REPORTER OF THE MEETING.

MR. THOMAS CRADDOCK'S IMPROVEMENTS IN THE STEAM-ENGINE.

SIR.—The name of Mr. Thomas Craddock has been known to you and the readers of your valuable Journal for more than 20 years in connection with improvements of the steam-engine, and during that time Mr. Craddock has made statements which, if true, are of immense value and importance to the nation at large, and he has done all in his power to induce any of the public to either contradict these statements or to come forward and assist him to establish them for ever as positive realities. Hitherto all his efforts have been of no avail, although he has spent the prime of his life, and has exhausted his means and his health, and is at this time incapable of obtaining a living. Yes, Sir, I can assure you that at this time such is Mr. Craddock's position, and, although none of the readers of the Journal could be induced to help him in his inventions, I cannot help thinking that some may be induced to render him assistance now, and place him beyond want, if you would kindly lay his case before him and the public. In case nothing of this sort is done, Mr. Craddock must inevitably add another instance to those who have gone before him of real benefactors of mankind being rewarded by poverty and starvation even to death, and to a nation's disgrace. Should any of your readers doubt what I say of Mr. Craddock's condition I shall be glad to correspond with them, and give them every proof of what I say. I will only add that I hope you will pardon me taking the liberty of asking for an early insertion of this (as it may otherwise be of no use), as nothing should have induced me to write this but a desire to save the life of a deserving fellow-creature.—39, Sheepcote-street, Birmingham, Sept. 4. W. MARKLEW.

MINING NOTABILIA.

GREAT WHEAL VOR.—Very considerable improvements have taken place during the present week at these mines. A remarkable instance of sudden discovery occurred on Thursday last by the falling away of a piece of ground in the bottom level—the 204, west of Metal shaft—and laying open a wonderfully rich bunch of ore. The levels west of Ivey's look very well. Altogether the mine is holding on well. The advance in the is also a great boon to this mine.

TAMAR VALLEY SILVER-LEAD.—Capt. John Kitto, late of Great Laxey, writes:—I am not personally acquainted with this mine, but, judging from the specimens of ore from the 10 fm. level, which I have seen at the company's office, I am certain of opinion that it is a very valuable property. I am free to confess that I have not seen more beautiful stuff from such a shallow level, or anything more likely to produce a large quantity of lead ore in depth, for a very long time.

ROSEWARNE CONSOLS prospects are again improving, and will eventually repay shareholders for their outlay. The lode in the 70, driving west, is now producing rich copper, worth 5L per fathom, and as the end nears the caunter it will increase in value. This mine is worth watching, as the district is known to have made large deposits of ore near the caunter, and no doubt it will be the case here.

EAST NEPTUNE.—The discovery of copper ore which was lately made in this mine continues to hold good. The agent writes that he is confident of laying open a good bunch of ore as was formerly found in the adjoining mine, Old Wheal Neptune.

WEST ST. IVES.—Private information has been received by a large shareholder in this mine to the effect that not only were the prospects never better, but that they have a good course of tin in the end, and 50 fms. of high ground on it. The dollars are almost full of tin and copper, and this cannot be got up until the skip-road is ready. All this will, doubtless, be confirmed in the official report, which will be presented at the meeting of shareholders shortly to be held. The property altogether appears to be one presenting very satisfactory features, and, no doubt, will turn out to be one of great importance.

At LOVELL CONSOLS, operations are being carried on with all speed, and any day may bring tidings of a valuable lode being discovered. This appears to be a very cheap property, and one that will eventually well repay the outlay; every agent who has seen it speaks very favourably of its success. One fact must not be lost sight of, and that is that the lodes passing through the seat have returned over 1,000,000L worth of tin.

At EAST CHIVERTON, Bartlett's shaft is down 45 fms., and a cross-cut is now being driven north to intersect West Chiverton lode, and from appearances there is every reason to anticipate its being found productive; indeed, when we consider the fine specimens of lead found near the surface, it would appear to be impossible that it should fail.

DFNGWM MINING COMPANY.—At a special general meeting of shareholders, on Wednesday, a resolution was passed confirming the resolution of the last meeting to wind-up the company.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The annual meeting commenced at Dundee, on Wednesday evening, when the Duke of Buccleuch was formally installed as President, in succession of Mr. W. R. Grove, Q.C., F.R.S. The inaugural address was an interesting one, and was received with much applause. The proceedings of the several sections were subsequently commenced by the delivery of addresses by the several Presidents. The Mechanical Science Section was opened by Prof. Rankine, who laid before the meeting an able summary of the researches which had been made since 1850. The Geological Section was introduced by Mr. A. Geikie, F.R.S., who, in the course of his address, remarked that distant or near the day would, doubtless, arrive when we shall be able to connect into one story, as far at least as the fragmentary records will permit, the narrative of the varied volcanic eruptions which from early geological times have taken place in the British Islands, and to link that chronicle with the long history of volcanic action over the globe. The Economic Science Section was presided over by Mr. Grant Duff, M.P. The committee reported in favour of a uniform system of weights and measures. It was agreed that the monetary convention of France, Austria, Belgium, and Switzerland was a great step in the right direction. In a Supplement with next week's Journal the publication of such papers as bear upon subjects in connection with mining will be commenced, with Capt. Bedford Pim's paper on the *as always through Nicaragua*, read in the Geological and Ethnological Section.

Meetings of Mining Companies.

EAST SNAEFELL MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Old Jewry Chambers, on Wednesday,

Mr. W. TUXFORD in the chair.

Mr. THOS. THOMPSON, the secretary, read the notice convening the meeting. The accounts, as laid before the meeting, showed a balance of assets over liabilities of 1317L 4s. 7d.

The following report from the agent was read:—

Aug. 31.—I have great pleasure in handing you the following report of the mine. At the time of your last meeting of shareholders the shaft had been sunk to a depth of 7 fathoms, close to the bed of the Glencherry stream, and about 50 fathoms south of its junction with the Kennay River; we here discovered a very promising looking lode, and judging from its position and bearing, as well as general character, I had reason to believe it to be the continuation of the main lode at Great Laxey, which opinion subsequent operations seem decidedly to confirm. We have driven an adit level southward from the Kennay River, and unwatered the shaft to a depth of 9 fms., containing the adit about 8 fms. beyond it. We have also sunk below the adit 15 fathoms, and driven northward at this depth 10 fathoms; the result of this and other minor drivings being to prove that from this shaft to the main river there exists an ore-producing lode, and I believe at no great depth from the surface profitable deposits of ore. From very careful observation of the dip of the ore-bearing ground, &c., I have staked an engine-shaft close to the wheel, which I believe will hereafter be found in the best position for most readily developing and laying open the mine. This shaft is sunk vertically to a depth of 10 fathoms, where we have intersected a small quartz vein, spotted with lead and jack; this appears to be only an off-shoot, or a portion of the main lode, and our course is simply to continue sinking perpendicularly to the depth requisite to drive out and meet the 15 from the other shaft, which depth will be reached in about two months. I now come to an important matter, as to the plan of working for the next two or three months. It may appear strange that, with the wheel all in readiness, we should no longer be subjected to the expense of drawing water by manual labour at the south shaft, but I have to state, in the first place, that by keeping the south shaft clear of water we are enabled to sink the engine-shaft much faster and cheaper; and, secondly, that this shaft being so close to, and nearly on a level with, the centre of the wheel, it will be judicious as soon as we reach the 15 to put in a plunger-lift. By this arrangement we shall husband the power of the wheel, and better lay out the pitwork. In the 15 fm. level forehead there is now a very fine-looking lode, the main part being composed of quartz, killas, and lead ore, already worth the latter about $\frac{1}{2}$ ton per fathom, and looking unusually promising. In fact, from the appearances, I fully expect in a few fathoms further to lay open profitable tribute ground, which, considering the depth from surface, would have no parallel in the island, excepting Great Laxey and Foxdale. I expect the engine-shaft will reach this run of ground at a depth of 25 fathoms. In conclusion, I beg to repeat my conviction that Glencherry will one day make a first-class mine, and also that the present company, with energy and economy, have a very good chance of realising most satisfactory results, and I trust the value of the property will ere long be more certainly estimated by sales of ore.—W. H. ROWE.

The CHAIRMAN said he could congratulate the shareholders on the future prospects of the company. The samples of ore then upon the table, and which had arrived at the office that morning, put him in mind of Great Laxey. It only required for them to prosecute the mine with vigour to achieve a profitable result. Mr. THOMPSON said that Capt. Henry Rowe had told him years ago that he felt assured that the Glencherry lode, belonging to the East Snaefell Company, was identical with the Great Laxey lode. And Great Laxey itself had not produced such splendid stones of ore at so shallow a depth. Capt. H. Rowe had always stated, also, that Glencherry would undoubtedly be a great mine, and had always advised him on no account to part with his interest in it.

The report and accounts were then adopted, and the retiring directors and auditor selected. A vote of thanks to the Chairman concluded the meeting.

EAST ST. JUST UNITED MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, New Broad-street, on Wednesday,

Mr. HENRY L. PHILLIPS (managing director) in the chair.

The notice convening the meeting having been read, the reports of the directors and agents, and also the balance-sheet, were taken as read. An abstract was given in last week's Journal. They stated that the mines possessed by the company were being developed upon a very extensive scale, and that there is every prospect of remunerative results being attained. The western engine-shaft, which is being sunk on Savenall's lode, is going down upon the 90 upon this lode, east and west of the engine-shaft, will open up a very valuable and productive piece of ground. The directors believe these mines are now arriving at that depth where greater returns may be fairly expected, and they base their opinion as to this upon a comparison with the other principal mines of the St. Just district. The necessity for carrying on operations upon a large scale, at the same time with the utmost economy, has particularly engaged the attention of the directors, and they believe that the manner in which these mines are worked will favourably compare with any other progressive tin-producing mine in the county. The machinery is in good working order, two new axles for the stamps having been recently fixed, and the dressing-floors, which cover a great extent of surface, and embrace all the leading improvements in tin dressing, are capable of returning any quantity of ore which may be raised from these mines. The directors congratulate the shareholders upon the improvement which has taken place in the condition and prospects of their property, and they hope that, with a better price for their produce, and by a vigorous and economical development of the mines, they shall be in a position to announce the re-opening of success-ful and remunerative results.

The report of the agents (Capts. Richard Pryor, R. P. Goldsworthy, and Richard Wearne) detailed the progress made at the different points of operation and the number of persons employed, and stated that the greatest depth attained is at Savenall's lode, on which the engine-shaft is sunk 90 fathoms below the adit, the adit being 25 fathoms from surface, making depth from the surface of 115 fathoms. The lode is 5 ft. wide in the 90. A very important change has taken place in the character and value of the lode in the last 4 fms. sinking. This they most undoubtably attribute to the intersection of Wheal Bozans lode, and it fully realises the expectations which were entertained of the value of this intersection, and seeing that we have opened 5 fms. east and 5 fms. west of the shaft in the 90, in valuable tin ground, they conclude that it is the top of a very valuable deposit of tin, and most encouraging for further development in depth. The shaft will be sunk with all possible dispatch, and continue the driving of the 90 east and west upon the lode. In conclusion, they begged to state that, looking at the important improvement in the bottom of the mine, by the intersection of Wheal Bozans and Savenall's lode, should this retain its value in depth, which is very probable, as at this and deeper levels most of the neighbouring mines have made their valuable deposits of tin, and the chance of further improvement on the Buck, Reddipper, Wheal Owl, and north lodes, they should soon be in a position to regulate the monthly returns and increase the same very considerably, and with an improved state of the tin market, would also be enabled to give to the shareholders a good return for their outlay.

The CHAIRMAN said it now became his pleasing duty to move that the report of the directors and balance-sheet be received and adopted, and in doing so he need only make a few brief remarks, simply because the position of the company was already more or less known to the shareholders, apart from the details set forth in the report, which it had just been agreed should be taken as read. He felt that upon the present occasion there could not be a divided opinion that he might fairly and honestly congratulate his co-shareholders, as well as his colleagues upon the board—each member of which held a considerable interest in the company—upon the satisfactory results that were already being realised from the western mines, which they purchased in September last. There could be no question that that was a step in the right direction. An important point in connection with the development of that property was the improvement that had recently taken place in the engine-shaft, which was being sunk on Savenall's lode. That shaft was down to a depth of 90 fms.—a depth which in that district was, he need hardly say, analogically important, but when he mentioned the fact that at that point the lode was very remunerative, he thought that the present might fairly be regarded as a significant augury as to the future—that is, when (say) the 100 fm. level was reached. As to the eastern mine, that was not at present being opened upon the scale originally contemplated, and for the simple reason that the directors were most anxious to bring about, as nearly as possible, an equilibrium between receipts and expenditure. They, in common with all other tin mines, had been adversely affected by the depressed price of the metal they produced, but all associated with such properties had, he thought, good reason to anticipate that—"A better price for tin"—would at no distant period be realised. In saying that he was not expressing his own opinion so much as that of those who were closely and extensively connected with him, he was in daily communication. (Hear, hear.) Up to the present time they had been realising for their tin not more than 53L or 55L per ton, at which price the expenditure was scarcely met, but in all probability their next sale, which would take place in a few days, would realise a much better price—perhaps as much as 55L or 56L per ton. Under those circumstances, assuming they continued to raise not more than 16 tons per month, it would make a difference to them—upon that minimum yield—of something like 400L per annum, which, of course, would go towards the swelling of the net profits. A point of no less importance was the fact that something like a normal value for tin—if he might be allowed the term—would enable them to at once put a large number of tributaries to profitably work the ground that had hitherto been unavailable—in other words, render that which was valueless and unproductive valuable and productive. He knew there were those who were sanguine enough to believe that before many months had elapsed they would have black tin at 70L per ton; but if the price advanced to not more than 60L, or at any rate to 65L, this property would be in a position to make such a return to the shareholders as would repay them for their outlay. Even now the monthly loss upon the whole of the operations, which embraced a considerable amount of tutwork, was of a merely nominal amount, which, after all, was probably one of the best, because one of the most tangible evidences that could be adduced as to its value. Few mines possessed either such elements of success, or such very favourable prospects; it was only by comparison with the other progressive mines in the St. Just district that the value and importance of the Savenall's lode, in the western mine, could be at all estimated, and by comparison they found that in this mine they were now only just reaching the productive depth of the district. But it was not to be supposed that because he had so prominently referred to Savenall's lode there were not other points of operation equally important, at least prospectively; for instance, there was Owl lode, which had been worth about 30L and 40L per fathom; it had temporarily fallen off, but other levels were being driven up, and there was no doubt that in a few months there would be a great improvement in that portion of the set; and there were also other lodes in course of development. If they compared what their own mine was doing with that which was being done by other mines, not only in that district, but throughout the county, they could come to but one conclusion—that it occupied a very excellent position, and that when sufficiently developed it would successfully vie with any of the celebrated old mines in the

famed St. Just district. He must confess that his primary desire was to see the western engine-shaft down to the 100 fm. level, and the lode opened upon and west, because there he looked for something permanently important. As here he might mention that whatever position the property might assume he never be worked with the view of making a temporary show by producing it periodically for a few months, but with the sole object of rendering it permanently remunerative. They had no possible end to gain by the former, but the latter would be enhancing the permanent interests of the shareholders, as well as the gratulation of the proprietors upon the encouraging prospects of their enterprise, stating that he should be glad to afford any further information that might be required, by concluding by moving that the report and balance-sheet be received and adopted.—The Hon. Mr. DRUMMOND had much pleasure in seconding the proposition.

Mr. CARNEGIE wished to know the loss they had made during the last year 7847L, against which there were sales of 10000L which had realised 4316L, and the difference was the loss; but it should not be forgotten that during the first months of that period they did not have the advantage of returns from the Western Mine, which had assisted them so materially. He had omitted to mention in his opening remarks that Capt. Pryor had, unfortunately, met with an accident, by being thrown out of his gig, otherwise he would have been present, but Mr. Arguin, the purser, who was perfectly familiar with every detail in connection with the property, would gladly reply to any enquiry that shareholders might make.

Mr. ARGUIN, replying to questions from several shareholders, stated that the CHAIRMAN said that the total expenditure during the last year 7847L, was 60L per ton a very large quantity could be taken away at a good profit. If the lode in the engine-shaft should continue good to the 100, of which there was every probability, it would prove of the utmost importance to them; and as property was now in all but a self-supporting condition, the current month loss at 60L per ton was a loss of 10000L.

Mr. TAYLOR could not understand how they were conducting their business a loss, when in the first paragraph of the report of the agents it is stated that "we are driving the 90 east from the engine-shaft, and stopping the back by 12L per fm., this level is extended 5 fms. from the shaft." Under these circumstances, how came it that there was a loss instead of a profit?

The CHAIRMAN said because, as the agents also stated in their report, they were 50 men on tutwork, and there were likewise 86 on tribute; there were 96

Mining Company. The lode in the 14 was beyond the usual size, being from 10 to 60 feet wide. He never saw such a lode fail to produce a good mine. The mineral ground was found for 70 fms. in length. This contains ore, more or less all the way. At the new shaft, when the lode was first intersected, rocks of lead ore, weighing from 1 to 2 cwt. each, were taken from the lode. This ore, he was happy to say, had continued to the level, and in the bottom of the shaft, now 3 fms. below, the lode was of the most promising character. At the eastern part of the mine, where several lodes would form a junction, a new lode had recently been discovered, and when the 14 fm. level should be extended about 50 fms. further he looked for a deposit of ore there. In his experience in the Isle of Man, where he had seen all the mines, this was certainly the best, next to Great Laxey and Foxdale.

At the termination of the ordinary meeting, in accordance with a notice to that effect, the same was made special, to consider the question of altering the Articles of Association, with regard to the voting of members at meetings of the company, when the following resolution was submitted and passed:—"That the Articles of Association of the company shall be altered, by excluding therefrom Clause 44 of Table A, in the first schedule to the Companies Act, 1862, and by substituting for same the Clause following:—Every member of the company shall have one vote for every share which he holds in the capital of the company." And that a special general meeting of the company shall be called for the 6th day of September, 1867, for the purpose of confirming this resolution."

A vote of thanks having been passed to the Chairman and directors, the meeting closed, the shareholders having expressed themselves much pleased with the prospects of the company.

[ADVERTISEMENTS.]

From Mr. EDWARD COOKE:—The continued firmness in the Metal Market has caused a good demand for shares in Cornish mines. Owing to the comparative small sale of Banca tin by the Dutch Government, together with a falling off in the quantity now produced in Cornwall, it is very probable that a rise of 10 or 20 per cent. will take place in the price of English tin. This small mines as Great Wheal Vor, Carn Brea, Tincroft, Prosper United, Dolworth, Trumpet Consols, and several other mines, would be indeed a great benefit, and a source of encouragement to all engaged in the mining interests of the county of Cornwall. In addition to the remarks I made last week upon PRINCE OF WALES MINE, I would here observe, what may not be generally known, that the copper ore produced by this mine realises 3s. 6d. per unit, at the same price, more than that of any other copper ore in the county of Cornwall. This is owing to the fact of its containing a considerable amount of silver. This district has been celebrated for the production of silver, and it is by no means improbable that it may again cause excitement in the mining world from the produce by the Prince of Wales Mine of this valuable metal. The shares have fluctuated in price during the week, owing, of course, to the ordinary causes of supply and demand. Whatever fluctuations may take place in the price of the shares will not alter my opinion on the merits of the mine, which is at present only in its infancy, if I may use the term. WEST DRAKE WALLS is the adjoining mine to the east, and from all appearances is likely to prove an important and valuable mineral property. At present nothing scarcely has been done in the way of developing the several lodes that traverse this set. An engine is being erected for that purpose, so that a few months may elapse before any extensive operations can be carried out, but I would advise my friends not to lose sight of this property while the shares are very low. DRAKE WALLS, as is well known, is a mine that has returned very large quantities of tin; and upon a further slight rise in the price of this metal will very materially increase its returns. For many months past the committee of management have only allowed just tin enough to be raised to pay the cost of working the mine. It is rumoured that (since my visit to the mine last week) a very important discovery has taken place, from which, no doubt, large quantities of tin will be raised, but in other parts of the mine there is a great deal of tin ground that can be made available if a little better price for tin could be obtained, and of this there is a great probability. Drake Walls Mine will command more attention than it has done for a very long time. WEST GREAT WORK is still opening up very well. During the past few weeks it has been discovered that the operations of the adjoining company have been carried on in the ground belonging to West Great Work Mine, to the extent of 16 fms., in good tin ground; and a shaft has also been sunk to the depth of 5 fms., this adds immensely to the value of West Great Work Mine. There are several mines which may now be safely bought into that are selling at very moderate prices, while such mines as South Cadron, Devon Great Consols, Herdfoot, West Chiverton, East Lovell, Trumpet Consols, Great Laxey, Great Vor, and Prince of Wales will pay 12½ to 15 per cent. in quarterly and bi-monthly dividends. The prospects of Cornish mining interests are more cheering than they have been for a long period, while in Wales there are several mines, including Westminster, Bryn Gwilog, South Darren, and others, deserving of attention. In my next I shall make a few remarks on these mines, and also on some in Shropshire.

Foreign gold mines continue to attract attention, and certainly the very large profits made by some of them—St. John del Rey, Don Pedro, and Port Phillip—justify that attention. CHONTALES have been in good demand. Mr. Duran, the secretary of the company, has returned from the mines, after spending several months in fully investigating the affairs of the company, and placing them on a firm basis. He has brought home samples of the produce of the Chontales Mines, taken by himself from various places, so that the shareholders may depend upon getting authentic and reliable information on the value of their property. The samples of gold ore available to have been sent to the assay office to be tested, and grand results are expected. Through evil and good report, it is well known that I have constantly adhered to the opinion that the Chontales will ultimately prove one of the most successful gold mining companies that has ever been formed. The fully-paid ordinary and royalty shares are well deserving of attention.

Anglo-Brazilian, Rossa Grande, and Frontino and Bolivia shares, at their present low prices, offer a good opportunity for the outlay of a little capital, with the view of realising large profits, while PESTARENA shares may be considered a good investment. The returns of gold from this mine have been large and continuous, and I am informed on good authority that there is every probability of an increase. One advantage this property possesses over that of the others named is its close proximity to England, being only two or three days' journey from our shores. The reports just received from the Pestarena Mines are exceedingly good, and the remittance of gold for the past month 1060 ozs., and the manager states that there will be a steady increase. The profits are already 15000, to 20000 per month, and the shares are only at ½ to ¾ per cent.

From Mr. J. B. REYNOLDS:—The markets are now assuming that which I have ventured to predict they would do, and a healthy tone stimulates all who wish for the perfect restoration of confidence. The mining interest is now being regarded with that earnestness which more becomes those who are the proper development of the vast mineral resources of this country at least; and the advance in metals, so long hoped for, is now taking place. The period of depression through which we have passed ought to have a very salutary influence on all who have anything to do with companies of all descriptions, but more especially of those companies whose business it is to seek for mineral wealth; that the public are getting alive to the comparative safety and advantage of making an investment there can be no doubt, and the history of the business career of many men will go to prove, I think, that large fortunes have been made by careful and judicious investors in British mines. Like all other pursuits, it cannot be advantageously followed up if those who patronise it do not exercise common sense, and do not allow themselves to be allured into what must appear to any man who calmly calculates a very dangerous speculation. Prices of mining stocks are advancing, but the rise having so recently commenced there remains an admirable opportunity for judicious selection, especially as the improvements in many properties, in themselves, more than justify the upward movement which have taken place. The shares in some of the mines which I have from time to time ventured to notice are held more closely than ever, and the upward tendency is a feature I observe with much pleasure. In nine cases out of ten it is safe to take a profit of cent. per cent.; but there are exceptions to every rule. Non-market mines will, I dare say, be benefited more than those which are generally dealt in on the market—for this reason, that many of the latter are so very deep, and expensive to work, and, moreover, have of recent years been worked so unfairly, that the shareholders will not have much permanent benefit; but there are many non-market mines, held by very wealthy proprietors, which are comparatively young, and in which reserves have been held open that can now be advantageously taken away, or work done which has brought the seekers on the eve of important discoveries. Also, there are some low-priced market mines which are decidedly good to buy for a consideration. I would suggest the propriety of an average of all stock held by my readers which has been unduly depreciated—provided, of course, the shares are sound, and worth holding. This is, I am quite certain, a suggestion which ought to be adopted. Let it not be forgotten, after all, that mining is a pursuit which, to be successful, must be diligently followed up, and not commenced to-day and laid aside to-morrow, and thus the necessity of fostering that confidence necessary in all undertakings.

The readers of the Journal are from week to week very fully informed as to market mines; therefore, it will, perhaps, not be out of place to take up the subject of non-market mines, which many study with so much interest. Since my recent publication, doubts, my readers have perused with great pleasure the counts which have appeared relative to WEST WHEAL KITTY and WEST ST. IVE'S MINES. I was truly scarcely prepared for such favourable accounts so soon, and the quantity of tin ore at West Wheal Kitty ready for dressing is the most substantial feature which can be noticed. The mine, moreover, is just now in its most favourable circumstance, in many respects, and it is no wonder that the shares are higher, as well as very much firmer. West St. Ives is destined to attract more attention than any person at present contemplates. The mine, the agents inform the proprietors, never looked better, and the prospects of immediate success are now becoming evident, notwithstanding the small outlay. The old stock of this stock are very sanguine as to results, and, without question, have the best possible reasons for their expectations. The St. Ives district, made celebrated by the great success of St. Ives Consols (which adjoins West St. Ives), is worthy of still further attention, and, doubtless, will be fully developed, concerning lead mines, the most brilliant success ever met with in Cornwall as EAST WHEAL ROSE, and it is rather remarkable that this property should be coming into such prominent notice at a time when a great success is so rare. The set is now known as ROSE and CHIVERTON, and will, in all probability, be equal to the Old East Wheal Rose. The reports from the most authorities certainly point to this result, and the appearance of the new lodes most conclusively bear out their decided opinions. The vast mineral ground now the property of the Rose and Chiverton Company comprises a large area, which, it would appear, offers ample scope for two companies, and the question as to whether the Rose and Chiverton set should be divided is one which will demand the attention of the shareholders. Should such a division made, it is not at all improbable that the shareholders in Rose and Chiverton will realise a very handsome profit; but, independent of all this, there are few properties selling at such a cheap rate as Rose and Chiverton United at the present moment, as future events will show. The district will be a study in itself years yet to come, and no doubt discoveries will be made which will throw additional light on the mineral resources of Cornwall. GREAT SOUTH CHIVERTON is considered to be a property of considerable promise, and persons well qualified judge pronounce a very favourable opinion upon it. WHEAL CHIVERTON is looking very favourably; and the merits of WEST CHIVERTON, as a splendid dividend property, are universally acknowledged.

WHEAL MINE, which adjoins Rose and Chiverton United, is a dividend property of great value, and as an investment in it can only be looked upon with confidence. There are other properties, which time will not allow me to describe, that should receive at once the attention they merit. Referring again

to the markets generally, there is every indication of a great amount of business being transacted before the year closes; indeed, the progress of events during the past three weeks fully justify the remarks in the last article I wrote to the *Mineral Journal*. The operators who were then on the field can now reap good profits, and if I am not very much mistaken, we shall have prices ruling higher than for years past, because I never remember so many mines so full of promise at one period offering for the investment of capital during the whole of my business career.

From Mr. JAMES HUME:—The Share Markets gain strength, and are assuming an active appearance, and it is hoped that the gloom of the last 18 months is at last dissipated. During the last month the best class railways have risen 6, 8, and 10 per cent. Other securities have also been in fair request, the tide of speculation is rapidly extending to mines, which in all ordinary times supply favourite mediums of investment, and justify so; in most cases the capital required to buy the majority of the shares need not be large, and in progressive mines especially very large profits are obtainable, often by the outlay of a very small amount indeed. At the present moment it is scarcely possible to err in making an investment. We may almost with certainty assume that most of those mines which have survived the late period of depression are possessed of some merit. A great many, which before were struggling for existence, have been obliged to succumb. The great drawback has for a long time been the low price of metals, but now we have copper and tin advancing satisfactorily, which always causes a demand for good mines.

Seton, Marke Valley, South Frances, West Seton, West Chiverton, and several others, have found good buyers. GREAT NORTH DOWNS deserves notice as a mine taking rank with the large copper-producing mines; there is a most extensive run of copper ore laid open in this mine, and profits ought to be substantial and continuous. Shares are not dear at quotations. GAWTON COPPER will also do well, with a fair standard. EAST BASSET improves gradually in the 130 west; it is the thin end of the wedge, and the lode will probably open, as in the 120, to 40 fathoms of ore ground. The westerly dip accounts for the delay in reaching this deposit. Among the progressive mines that have been for some time overlooked EAST CHIVERTON attracts notice, and several lots of shares have been taken at the moderate quotations lately ruling. The chances are much in favour of this mine taking a good position, and the indications are all that can be desired. CHIVERTON MOORS are enquired for, and may advance. NEW WHEAL SETON, adjoining Seton, is a cheap share, and may any day rise 100 per cent. EAST GREENVILLE will probably soon again attract speculation; with some promising points at hand, the chances are certainly in favour of the buyer. There are several other shares from which good profits may be drawn, and to which attention will be given in a future article.

COMPANIES REGISTERED DURING THE WEEK.

Company.	Capital.	Shares.	Each.
Taqueril Gold Mining	£100,000	100,000	£1
Co-operative Insurance	12,000	48,000	5s.
Mining Association	50,000	25,000	£2
Atherton Steam Threshing	400	40	10
Italian Consolidated Mining	50,000	25,000	2
Sunderland Mutual Protecting	Unlimited		
Berthlywd Slate	100,000	100,000	1
One Wine	8,000	80	100

MINING ASSOCIATION, 50,000*l.*, in 25,000 shares of 2*l.* each, with power to increase.—The reconstitution of the Mineral Rights Association (Limited), and the taking over the shares and interests of such shareholders in that company as may agree to transfer the same. The examination and inspection of mineral properties situate in any part of the world. The purchase, or acquisition, of mineral properties, or of any shares, rights, or interests therein, or the right to work and mine minerals in any part of the world, with a view to work, or to make, a re-sale of the same, and generally to do all such things as are directly or indirectly incidental to mining and metallurgical operations, &c. Number of directors not to exceed seven—JOHN WILLIAM WILLIAMSON, 4, Warwick-road, Paddington, Esq., 100; THOMAS STAUNTON, 11, Porchester-square, Middlesex, Esq., 100; and SAMUEL WHITFIELD DAUKES, 7, Whitehall-place. Qualification, 100 shares; remuneration, 35*l.* per annum; and 10*l.* for every 1 per cent., and when any shares shall be distributed by way of bonus the directors shall be entitled to an allotment of such shares, equal to 7 out of each 100.—SOUTHATE, Temple, Solicitor.

TAQUARIL GOLD MINING COMPANY, 100,000*l.*, in 100,000 shares of 1*l.* each, with power to increase.—To purchase certain lands, or interests in lands, in Brazil, for the purpose of mining operations. For mining for gold and other minerals, and carrying on processes for preparing and rendering ore fit for the market, &c. Purchase money for the estates of Taqueril, Ponte Grande, and Carvoeira to be 26,000*l.*; 14,000*l.* to be paid in cash, and 12,000*l.* in 24,000 shares, 10*l.* paid up. Number of directors not less than 5, nor exceeding 12; qualification, 200 share.—Directors: HUGH BIRT, 16, Ulster-place, Regent's Park, surgeon; 5; THOMAS LOUGHMAN JAMESON, Colonel, 33, Kensington Park-gardens; 5; SPENCER NAYLER DICKSON, Abbot's Reading, Newton in Cartmel, merchant; 5; CHARLES PHELPS, 8, Broad-lane, merchant; 5; and JOHN DUNNING TROTTER, 1, Whitehall, Paddington, Esq., 100; THOMAS STAUNTON, 11, Porchester-square, Middlesex, Esq., 100; and SAMUEL WHITFIELD DAUKES, 7, Whitehall-place. Qualification, 100 shares; remuneration, 35*l.* per annum; and 10*l.* for every 1 per cent., and when any shares shall be distributed by way of bonus the directors shall be entitled to an allotment of such shares, equal to 7 out of each 100.—EDWARD COOKE, 11, Southgate-street, Temple, Solicitor.

ITALIAN CONSOLIDATED MINING, 50,000*l.*, in 25,000 shares of 2*l.* each, with power to increase.—The acquiring from time to time in perpetuity, or for any less estate, of any concessions, mines, mining rights, and alluvial deposits, situate in the kingdom of Italy, with the lands, woods, bridges, workshops, mills, machinery, water rights, and amalgamating works connected therewith. The working, raising, or getting, or developing such mines, and the minerals therein. The preparation, manufacture, and sale of ore, metals, or minerals, raised from such mines, &c. Whereas arrangements have been made on behalf of this company for the acquisition of three Government sets of mines, all situate in Italy—that is to say, two sets respectively named the Alpetto di Pestarena and the Piano dell'Oro di Pestarena, situate on the boundary of the Pestarena Mines; and another set in the Val Bianca, in the valley of the Val-lanza, Italy. And whereas arrangements have also been made on behalf of this company for the acquisition of the Royal Concession in perpetuity of two copper mines, one called Miggianone, in the district of Pallanza, near the River Toc, Italy; and the other called Baveno, near the town of Baveno, near the Lago Maggiore, with the whole of their extensive plant, and also the leasehold interest, with the right of purchasing the freehold of a silver and lead mine, called Brusinplano, situate in the Lago Lugano, in Lombardy. And whereas it is intended that the acquisition of the said several mines and properties, and such other mines and properties as may be selected from time to time, shall be made as far as possible by the issue of the company's debentures, so that the share capital will be applicable to the development of the mines. And whereas the arrangements made for the acquisition of all the said several mines and properties (except the freehold of the said silver and lead mines) will enable the company to purchase them for a sum not exceeding 50,000*l.*, of which 45,000*l.* will be agreed to be taken in debentures, bearing interest at 5 per cent., the vendors having consented to forego the first year's interest on such debentures: 15,000 shares must have been subscribed before the company can commence business. Maximum number of directors 12—JONAH SMITH WELLS, 5, Holland Park, Notting Hill, Esq., 200; JAMES RUSSELL FREWELL, Elm Bank, Addiscombe, Esq., 100; HENRY J. STEPHEN SMITH, Oxford, Savilian professor of geometry; 100; THOMAS STAUNTON, 11, Porchester-square, Esq., 100; WILLIAM MICHELL, Heskin Hall, chorley, Lancashire, clerk in holy orders, 100; and FREDERICK FOSTER QUIN, M.D., 16, Bruton-street, Berkeley-square; and in Italy, Commander EUGENE FRANCOPORT, F.G.S., Palanza, Italy; Commander CARLO CADORNA, senator and Councillor of State, Italy; and Cavaliere CARLO MIRIBA, Regent of the National Bank of Italy. Qualification, 100 shares; minimum remuneration, 50*l.* per annum; when 10 per cent. is paid out of the profits 75*l.* per annum, when 20 per cent. is paid out of profits 100*l.*—CURTIS and CO., Haberdashers' Hall, Gresham-street.

BERTHLYWD SLATE, 100,000*l.*, in shares of 1*l.* each, with power to increase to 200,000*l.* To purchase and carry on the leasehold slate quarries and works in the farms of Gerraint and Berthlywd, in the parish of Beddgelert, North Wales, formerly carried on by WILLIAM CLELAND, Esq. To extend the said slate quarries and works, and to purchase, or otherwise acquire, and carry on any other slate quarries in North Wales. The vendors to receive 25,000*l.* for the above: 10,000*l.* in cash, and the balance in debentures. Number of directors not less than three, or exceed nine; qualification, 200 shares—GEORGE BERRINGHAM, Moreton Villa, Kentish Town, surgeon, 200; ROBERT NORTON, 42, Park, Notting Hill, Esq., 200; JAMES RUSSELL FREWELL, Elm Bank, Addiscombe, Esq., 100; HENRY J. STEPHEN SMITH, Oxford, Savilian professor of geometry, 100; THOMAS STAUNTON, 11, Porchester-square, Esq., 100; WILLIAM MICHELL, Heskin Hall, Chorley, Lancashire, clerk in holy orders, 100; and FREDERICK FOSTER QUIN, M.D., 16, Bruton-street, Berkeley-square; and in Italy, Commander EUGENE FRANCOPORT, F.G.S., Palanza, Italy; Commander CARLO CADORNA, senator and Councillor of State, Italy; and Cavaliere CARLO MIRIBA, Regent of the National Bank of Italy. Qualification, 100 shares; minimum remuneration, 50*l.* per annum; when 10 per cent. is paid out of the profits 75*l.* per annum, when 20 per cent. is paid out of profits 100*l.*—CURTIS and CO., Haberdashers' Hall, Gresham-street.

MINING AND ITS PROSPECTS.—(From Peter Watson's "Weekly Mining Circular and Share List," No. 440, Vol. IX.)—"The continuance of propitious weather, the prospect of an unusually bountiful harvest, a pacification pervading all Continental matters, and a progressive increase of unemployed capital, have brought about a marked improvement in all stock and share markets. In the last number of my 'Circus' I indicated that from the general aspect of our commercial affairs, but more particularly from facts within my own knowledge, a steady and material advance in the value of metals might be looked for; since then the price of both tin and copper has again improved; when I say again, I mean that, in addition to that which I noticed last week, another advance in each has this week taken place. This I regard as but the beginning of a period of prosperity in Cornish mining, such as has not been known for many years; but before any further effect has taken place upon the market value of mine shares, the intending investor should forthwith make his selection, while in many cases shares can be purchased at merely nominal prices.

THE SOUTH FRANCES AND WEST BASSET DISPUTE.—With regard to the interminable law proceedings, the adventurers in South Frances were informed at the meeting just held that "since the account meeting held in July, the solicitors of South Frances have pressed West Bassett adventurers for the taxed cost awarded against them in the appeal cause before the House of Lords, and the matter was lately argued before the Lord Chancellor and other peers, who, on the special pleading and prayer of West Bassett, consented that these costs, which amount to nearly 500*l.*, should stand as a set-off until the valuation of the ores wrought in error by South Frances, north of the north line, is finally determined. To meet this now sole open question 52*l.* have long been paid into court, which was deemed by competent valuers more than sufficient for the purpose, and if so decided, as it is hoped in a short time will be the case, it will further carry South Frances costs against West Bassett in the action of Lyte v. Richards. This unexpected arrangement has necessitated the solicitors to require payment on account from South Frances, with which the committee will have to comply; nevertheless, they do not hesitate to recommend to the

adventurers a dividend from the present balance of 1*l.* per share, considering the improving prospect of the returns for the future will warrant it. West Bassett adventurers are still pursuing some unintelligible proceedings in the Chancery Court, and giving trouble to our solicitors, but the result will assuredly leave them, as before, nothing but mortification and expense."—West Briton.

HOLLOWAY'S PILLS.—THE GRAND REQUISITES.—Nobody will deny the assertion that for man's comforts and happiness, pure blood and a sound stomach rank among the first requirements. Both may be safely and inexpensively secured by these admirable pills, which act gently on the weakest frames, and cause no violent shock to the most sensitive system. Holloway's Pills have proved themselves competent to deal constitutionally with those infirmities which descend from parent

Mining Correspondence.

BRITISH MINES.

BEDFORD UNITED.—J. Phillips, Sept. 4: The stopes throughout the mine are without any alteration. The 90 and 75 fm. levels east, on the north lode, are being driven by the side of the lode. The stopes in the 75 fm. level east will produce from 3 to 4 tons of ore per fm. The lode in the winze in the 62 east is 3½ ft. wide, producing good work. The stopes in this level will yield 3 tons of ore per fm.

BEDOL-AUR.—H. R. Harvey, Sept. 5: The Brynia lode has not yet been intersected in the 100 fathom level cross-cut; the ground is changing, as if we were near the lode; it contains a great deal more spar than formerly. Jones's pitch is yielding about 15 cwt. of lead ore per fathom.

BOTTLE HILL.—Joseph Eddy, Sept. 5: The ground in the cross-cut now driving towards the north lode still continues favourable for driving; I think, by measurement, we shall cut the lode in about three weeks from this time. South Lode: The lode driving east in the 24 fm. level is now about 3 feet wide, composed of peat, spar, mastic, carrying copper and tin, but not to value. Judging from the character of the lode now in the present end, we may reasonably expect an improvement in the lode shortly. We have now a moderate supply of water both for drawing and stamping. The tributaries are now busily engaged in getting their tinstu that was broken by them last month to surface; should the water continue as we have it at present we shall soon get it stamped, dressed, and prepared for market.

B. ADDA.—R. Barkell, Sept. 3: The ground in the old engine-shaft is without any material change since last week. The alterations made in the pitwork, together with the recent favourable changes in the ground, will enable us to sink at a cost of 10s. per fathom. We have a great change in the 40 north, on east lode; the former price for driving being 14s. per fathom, is now reduced to 3s. per fathom; the end is producing saving work for copper. It has been extended far enough now to drain the sump that was sinking below the 27, which sump we were obliged to suspend working on account of quick water. We shall now resume the sinking, and effect communication with the 40, after which we shall have a piece of ground available for stopping. We have also an improvement in the ground in Pryor's level, the price being curtailed 4s. 5s. per fathom. There is no apparent change in any of the other bargains. We have about 10 tons of lead on the mine, and a corresponding quantity of copper of good quality. The prospects of the mine are exceedingly encouraging, and there is every indication, as the mine becomes developed, of its being increasingly valuable. The pumping-engine and also the drawing-engine work very efficiently, and are of sufficient power to put the mine to a considerable depth.

BRONFLOYD.—Thomas Kemp, Sept. 4: Settings for September: South of new shaft, in the 63, we have cut into the lode about 11 feet; it is worth from 2½ to 3 tons of ore per cubic fathom; set to six men, men, at 11s. 10s. per fm., stent 2 fms. The stopes under the 52, to ten men, at 6s. 6d. per cubic fathom; the lode is worth 2 tons per fathom. The stopes in back of the 52, west of winze, to four men, at 50s. per cubic fathom; the lode is worth 20 cwt. of lead ore per fathom. The stopes in the back of this level, east of winze, to four men, at 40s. per cubic fathom; the lode is worth 12 cwt. of ore per fm. The stuff these men are breaking will remain under their feet until all the ore ground is taken away up to the bottom of the 40, which is sufficient to last them from nine to twelve months. There are still two men employed in securing the 40.

BRYN GWOIG.—S. Harper, Sept. 4: The lode in the 102, east of engine-shaft, is still large, 4½ to 5 feet wide, the south part of which is looking particularly promising, being composed of spar, blonde, with fine deposits of lead ore. In the bottom of same level, west of winze, the lode is 4 feet wide, with good deposits of lead ore, but not regular; the same may be said of the run of ore in the bottom stope. The lode in the 82, west of No. 1 winze, is worth 3 tons of lead ore per fathom; the back of same level worth 4 tons per fathom; the winze is about 2½ to 3 tons per fathom. The lode in same level, east of engine-shaft, are worth 2½ to 3 tons per fathom. The lode in same level, east of No. 3 winze, is 1½ foot wide, composed of lead, blonde, and spar, worth 15 cwt. per fathom. We expect to meet with a bunch of lead in this end daily. The lode in the 75 west is still small, and at present very hard for progress; consequently, I do not expect a favourable change in the lode until I see a change for the better in the ground, which we shall have shortly. At the 62 east from engine-shaft, we have met with a very favourable change in the lode, and from present appearances I hope to see a greater improvement shortly. Bramwell's shaft is nearly completed from the 62 to the 75, but I have removed the men to assist the upper party to finish the skip-road, so that if we have good speed we hope to be in readiness to draw from the 105 yard level in about a week's time—that is if we can get our things from the foundry. Other parts of the mine much the same as for some time past. The lord's mineral agent has been through the underground operations to-day, and has expressed his entire satisfaction with the working of the mine.

BRYN GWYN.—H. Nottingham, Sept. 4: I have suspended the driving of lower levels south from incline, east of shaft, since the setting-day, and put the men to sink on the east and west point we lately intersected, and we have some very congenial ground, with small lumps of ore mixed through it. The driving going south from sump, in said level, is without any alteration to notice. The tributary who has been working in the No. 2 level has removed, and taken a pitch in the levels going south from the middle of incline, where he is getting a little ore. The ore ground in the north part of Field's level being exhausted, the tributaries have left it, so I have removed the two men who are working in the No. 3 level to raise a little ore from the south part of Field's level, and make some further trial in that direction. The tribute pitch, in bottom of old incline, continues to yield some fine lumps of ore going down eastward. There are two men working here now. We are going on with the dressing of the ore stuff we have broken as fast as possible, but, as we have no water, except what we pump by hand, I am afraid we cannot get all the smalls dressed up in time for sampling. We shall have the engine, with all connected with it, ready for starting to work the beginning of next week.

CAPE CORNWALL.—R. Pryor, W. White, Sept. 4: The lode in the 100 east is at this time a little disordered by cross-heads, in which we see veins of granite, and, judging from present indications, we think we are near it, at which point a great improvement may be expected. The lode in the stopes in back of the 90 east is worth 4s. per fathom. The lode in the 70 west is large, and producing some good copper ore.

CARADON CONSOLS.—S. Bennetts, Sept. 3: The south shaft is not as yet communicated with the rise; a large portion of the water from the former is now issuing from the latter, and this, coupled with the bad air, has effectually prevented us from doing anything towards hoisting this ground, but in the shaft we are doing all we possibly can. The bottom west end has slightly improved since last week, and is now worth 10s. to 12s. per fathom; lode 2½ ft. wide.

CARDIGANSHIRE LEAD.—E. Pearce, Sept. 5: Gian Rhedol Mine: The lode in the 40, east of engine-shaft, is worth 1 ton of lead ore per fathom, for the part carried—5 ft. wide, the lode altogether being from 15 to 18 ft. The lode in the 40 west is about the same size and value as the east, and I fully expect an improvement in this level are long, as there are several branches that will form a junction with the lode. The 40 cross-cut south is full of stuff, and suspended for the present; the ground in the end shows indications of the lode being near. The lode in the 30 east is producing saving work for blonde; this end is full of stuff also, and suspended. The lode in the 30 west is not producing enough lead to value at present, but, from the character of it, I expect an early improvement. No. 1 winze is hoisted to the 40, which will enable us to commence stopping shortly. The lode in No. 2 winze, below the 30, is of a most promising character, and will already yield 1½ ton of lead ore per fathom. The timber, and most of the wrought-iron work, is ready for the new wheel, and the carrier has gone after the axle and centrepiece to-day, and I hope it will be erected by the time promised; we shall then commence hauling stuff from the different bargains, and when clear shall resume working them as usual. We shall sample, on Monday next, 40 tons of blonde, and have several tons of lead ore dressed, and when the new wheel is up it will enable us to haul and go on with the dressing. Of late we have been impeded very much on account of the accidents with the old drawing-wheel.

CHIVERTON MOOR.—J. Juleff, Wm. Bennetts, Sept. 5: The engine-shaft sinking below the 65 is down 4½ fathoms. In the 65, east of engine-shaft, the lode is small. In the 65, west of engine-shaft, the lode is 2 ft. wide, and worth 5 cwt. of silver-lead per fathom. The rise above the 65, west of engine-shaft, is up 2½ fms., in a large lode, producing stones of lead. In the 65, east of flat-rod shaft, the men are now driving north in search of the lode. The winze sinking below the 65, at the flat-rod shaft, is worth 7 cwt. of lead per fm.

CLARA UNITED.—J. Davis, Sept. 4: Llywernog: The mine is drained to 2 fathoms under the 50, and we have to-day resumed crushing.—Settings for September: Stope No. 2, in the back of the 50, to two men, at 6s. per fathom; value for lead 15 cwt. per fathom. Stope No. 3, to six men, at 6s. per fathom; value 20 cwt. of lead per fathom. The 40 to drive west, to four men, at 14s. per fathom; the lode is small at present, but I have reason to believe there is a productive lode in advance of this end. The stopes in the back of this level is set to four men, at 6s. The lode is worth 20 cwt. of lead per fathom.

CRELAKE.—W. Skewis, W. Hooper, Sept. 5: The lode in the 74 west is 2 feet wide, composed of mastic, spar, and good sprigs of copper ore; this lode is improving in value as we drive westward; we believe it will be as productive as the 65 on getting under the point where the ore was met with in that level, is from 8 to 10 fms. more driving. The lode in the rise in the back of the 62 west is 3 feet wide, worth from 10s. to 12s. per fathom. The lode in the stopes in the back of this level is 3½ feet wide, worth 12s. per fathom. The lode in the 50 west is 2½ feet wide, composed of mastic, and copper ore, worth 10s. per fathom. The lode in Williams's, or No. 1 stope, in the back of this level, is 2½ feet wide, worth 6s. per fathom. In the new, or No. 2 stope, in the back of this level, the lode is 4 feet wide, worth 14s. per fathom. The lode in the winze, sinking below this level, is 4 ft. wide, worth 7s. per fathom. The lode in the 40 west is 3 ft. wide, containing mastic, spar, and copper ore; the end is very wet, and looks more promising than we have seen it for several fathoms driving. The western, or Dart's, rise, in the back of this level, is at the required height to communicate with the 28 fm. level, and the men are put to drive east for that purpose on a lode worth from 9s. to 10s. per fathom. The lode in the stopes in the back of the 40 is 4 feet wide, and worth 12s. per fathom. The lode in the 28 west is 1½ foot wide, composed of mastic and spar; we are not certain that this end is on the right part of the lode, but expect to ascertain before the next report.

CROWN AND WENDRON.—E. Reynolds, Sept. 3: The north part of the lode in the shaft is about 15 in. wide, producing occasionally good stones of tin; the horse of granite in it is wearing out fast. The lode in the winze is increasing in size, and looks more promising for tin than I have yet seen. I hope by the latter part of the week the adit level east, on the south lode, will be cleared and secured to the end.

DEVON AND CORNWALL UNITED.—T. Neill, Sept. 3: George and Charlotte: The lode in the 24 east is much the same as last reported.—William and Mary: In the 46 east the lode is much the same as for some time past. The lode in the 24 west we have cut the cross-course. The lode in the 22 west is 3 ft. wide, producing good stones of ore. The pitches are producing fair quantities of ore.

EAST BOTTLE HILL.—J. Eddy, Sept. 5: In driving east of the western shaft, in the 10 fm. level, the north and south branches have formed a junction, and the lode is much larger than we have had it for some time past; now full 5 ft. wide, and producing saving and stamp work.

EAST GUNNISLAKE.—James Phillips, Sept. 5: Since the report of the meeting we have met with another branch in the 54, but we are not yet through it. The lode in the shallow adit is not quite so large, and being more sparry, is not

so good for ore; it, however, contains some very good stones of ore, and is also together looking very promising.

EAST LOVELL.—R. Quantrell, Sept. 4: North Lode: The stopes in the back of the 45, west of shaft, is worth 12s. per fathom. The eastern stope is worth 25s. per fathom.—South Lode: In the winze sinking below the 40 the lode has improved, now worth 80s. per fathom, or upwards. The stope in the back of this level is worth 30s. per fathom.

EAST NEPTUNE.—P. Floyd, Sept. 5: In the 25 fm. level cross-cut, driving north of Hosking's shaft, we have cut into the lode about 7 ft., and find it to be of the same character and appearance, still producing splendid stones of rich grey and yellow copper ore, and from the present indications of lode, &c., I should say that we are not far distant from a large deposit of ore; we have now about 5 ft. more to drive to reach the north wall of the lode; when done I shall be in position to give you the value, size, &c. At Hosking's shaft the shaft men have been engaged in cutting plat, putting in penthouse, &c., in the 25 fm. level, which will be completed by the end of this week, when we shall with all vigour resume the sinking of the shaft to the deep adit, which is about 10 fm. The winze sinking below the 15 fm. level is communicated to the 25 fm. level, and we have now commenced to stop east and west of the said winze, on the course of the lode, which is producing good saving work for copper, and of a most promising appearance to improve. All the other work is progressing very favourably.

EAST ROSEWARNE.—C. Glasson, Sept. 5: In King's shaft, sinking below the 95, the lode has very much improved; it is now 12 in. wide, worth 6s. per fathom.

EAST ST. JUST UNITED.—R. Pryor, R. P. Goldsworthy, R. Wearne, Sept. 4: Eastern Mine: At Phillip's engine-shaft, sinking below the 30, the lode is without change; ground spare for sinking. The 20, driving east, on Agaworth lode, is producing occasional stones of tin. The 20, driving west, on Agaworth is without change.—Western Mine: At Saseall's engine-shaft, sinking below the 90, the lode is worth 12s. per fathom. The lode in the 76 west is worth 8s. per fm. The lode in the 90 west is worth 10s. per fm. The lode in the 76 west is worth 8s. per fm.—Buck Lode: The lode in the 62 east is without change.—Owl Lode: The lode in the 20, north from Reddipper's shaft, is worth 5s. per fathom. In the 20, south from Saseall's, the lode is without change to notice. The lode in the 20, north from West Buck shaft, is producing saving work. The lode in the 10, north from same shaft, is worth 6s. per fathom. The 10, north from same shaft, on the branch, is worth 6s. per fm. The adit, north from West Buck shaft, is worth 5s. per fathom, and is promising for improvement.—North Lode: The lode in the 20, driving east, is producing good stones of tin; the lode is very promising.

EAST TRUMPTON.—R. Quantrell, Sept. 5: This mine is opening out better than I expected. The lode in the engine-shaft sinking below the 60 is producing good stones of tin; and in the 60, driving west, the lode is 14 in. wide, yielding good stamping work. In the whin-shaft sinking below the 25, the lode is worth 10s. per fathom, sinking by six men, at 6s. per fathom.

EAST WHEAL AGAR.—W. Johns, J. Williams, Sept. 2: We have recently cut a lode in the 45 cross-cut, south of Dunsford's engine-shaft, which is about 1½ ft. wide, and have opened out on it west a few feet; so far as we have seen it is the influence of the cross-course, it is chiefly capel and flookan, and letting out water pretty freely. We shall be able to say more about it after another 6 ft. are driven. In the 30 cross-cut, south of Hext's lode, we have driven in the past month 5 fms. The ground is still good for progress, and this end is fast approaching towards the lode seen in the cotean pit at surface, in the junction of killas and granite.

EAST WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Aug. 31: Setting Report: The engine-shaft is sunk 14 fms. 1 foot below the 95 fm. level, and the lode is 18 in. wide, producing a little rim of a very kindly appearance. The 95 to drive east of engine-shaft, by four men, the month, at 5s. per fathom; the lode is 4 ft. wide, yielding copper ore and tin to the value of 8s. per fathom, and looks promising to bear a bunch of ore. The 95 west to four men, the month, at 5s. per fathom; the lode is 15 in. wide, yielding a little ore and tin, but not at present to value. The stope above this level by four men, the month, at 4s. per fathom; the lode is 2 tons per fathom. The stope from the east to two men, at 4s. per fathom; lode worth 15s. per ton per fathom. The winze to sink below the 95 west by four men, the month, at 12s. per fathom; here we are expecting to sink through a bunch of copper ore, because in driving it was worth in one place 100s. per fathom. The 75, to drive east of the shaft, by four men, at 18s. per fathom, where there is a small branch of copper ore about 4 in. wide; here we are anticipating a change. A stope above the 45 by two men, at 4s. per fathom; the lode is worth 4s. per fathom.

EAST WHEAL RUSSELL.—R. Odgers, Sept. 4: We have not yet cut through the middle lode in the 150 cross-cut; it is wider here than expected. The part now being cut into contains a little native and red oxide of copper, and grey copper ore, and water issues more strongly than before from the extreme point. There is no particular change in the 140 east; this point will be suspended on Friday, until a rise is put up and communicated with the winze in the bottom of the 130; the ventilation will be much improved then. The lode in the 130 cross-cut, east of the slide, is in advance of the present end, I think.

EAST WHEAL TOLGUS.—J. Daw, Sept. 4: I am glad to inform you that this mine is drained to the 166, or bottom level, and all of the copper and tin tribute pitches are again in full course of working. In the 140, east of Noel's shaft, the lode is 2 feet wide, producing 4 tons of ore per fathom. In the 140, west of Noel's shaft, the lode is producing 1 ton of ore per fathom. Altogether the mine is progressing favourably.

EAST WHEAL BADDERN.—R. Pryor, H. Tregoning, Aug. 31: We have no change to notice in the 75 cross-cut, driving south from Hill Brothers engine-shaft, during the week, except a little more water coming out of the end. In the 75 end, driving west from the cross-cut, on the Baddern lead lode, the ground is still improved, and the lode looking better, now about 2 to 3 feet wide, containing mandic, blonde, flookan, and spots of silver-lead. The water is still increasing as we make progress towards the old mine.

NEW BIRCH TOR AND VITIFER CONSOLS.—W. Skewis, Sept. 2: Hambley's Shaft, North Lode: The lode in the 48 east is 1 ft. wide, worth 4s. per fm.; set to four men, at 4s. per fathom. The plat is completed in the 36 fm. level, new shaft, and two of the men put in the 12 fm. level west, on main lode, which is now set to four men, at 3s. per fm.; lode 6 ft. wide, composed of spar, iron, and a small quantity of tin. I have not seen such a fine looking lode in the mine; we cannot say what it will do for us. We set on Friday seven pitches, at tributes from 8s. to 12s. 4d. 11s.

NEW CLIFFORD.—W. Michell, Sept. 5: Holland's Engine-shaft: We are still vigorously pushing on the cross-cut south from this shaft, and, as the ground has greatly improved for driving, we shall progress much faster than for the last two months; it is still a good mineral-producing stratum, containing in places green carbonate of copper in the divisions of the rock, so that there are good reasons for believing that the lode will be cut soon, and when cut will be a good one.

NEW CROW HILL.—W. Trelease, Sept. 3: We are going on with the cross-cut towards the lode in the 70 as fast as we can, but the ground is hard and wet.

NEW WHEAL LOVELL.—C. Badwen, J. Priake, Sept. 2: The engine-shaft is made good to the 62, and the necessary casing and dividing fixed; the men are now in course of driving the ends east and west in this level. The 50 fm. level end is being driven east; the lode at present unproductive; there is, however, a change taking place in the nature of the ground, which we view as a very favourable feature for the production of tin. The lode in the 60 east is still worth 6s. to 8s. per fm., and ground coming easier. The lode in the winze sinking below the 40 is worth, at least, from 13s. to 18s. per fm., with every prospect of further improvement. The lode in the rise in back of the 40 is less productive than when last reported on; there is still a good lode in the eastern part, worth about 15s. per fathom. We are not getting on with the dressing as fast as could be desired, in consequence of the falling off of the surface water at the stumps, which will now only admit the working of four heads instead of eight, there is, consequently an accumulation of tinstu on the floors.

NEW WHEAL TOWAN.—R. Pryor, Sept. 4: The lode in the adit level, driving west, is producing stones of copper ore, and looking promising for further improvement.

NORTH POOL.—Jos. Vivian and Son, F. Clymo, Sept. 5: Middle Lode: In the 40 fm. level, east of sump, the lode is 2 feet wide, composed principally of quartz, of a congenital nature for copper ore, which is disseminated throughout it. In the 40 fm. level, west of sump, the lode is contracted, but contains copper ore, and is likely soon to open again. Ballarat Lode, in the 40 fm. level, west of Ballarat shaft, is entering a better looking stratum, and improving.

WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,
MINING AGENTS, STOCK AND SHARE DEALERS, &c.
1, ST. MICHAEL'S ALLEY, CORNWALL, LONDON.

MESSRS. WATSON BROTHERS beg to notify to their friends and the public generally that Mr. W. H. CUELL has retired from the firm, in accordance with a clause in the deed of partnership; and having also sold to the remaining partners all his right, property, and interest in the business hitherto carried on by J. Y. WATSON, F.G.S., NAPOLEON FREDERICK WATSON, and himself, under the name of "WATSON and CUELL," the same will be carried on in future by Mr. J. Y. WATSON and Mr. N. F. WATSON, under the designation of "WATSON BROTHERS," and they take this opportunity to return their most sincere thanks for the great patronage bestowed and confidence reposed in the firm for 24 years, and to assure their friends and clients it will be their earnest endeavour to merit a continuance of both.

Messrs. WATSON BROTHERS have made arrangements for continuing their weekly Circular, which has had a large circulation for many years, to the columns of the *Mining Journal*, their special reports and remarks upon mines and mining, and state of the share market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1857, and published in 1849, by Mr. J. Y. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share dealing than there is at present; and, from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

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Certified schoolmasters, pupil-teachers, and others engaged in education, are also admitted to the lectures at reduced fees.

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The present operations are being conducted on the main lode, the same as that on which the Westminster Mine has been so successful, and the agent, in writing of it, says:—"We have been drawing stuff to surface to-day; it looks well, several stones of lead ore weighing nearly ½ cwt. each."

A neighbouring mine has unwatered this property, the outlay on machinery will, therefore, of necessity be small, a drawing-engine being all that will be required.

The majority of the shares (over 5000) are being taken up by the share-holders in the Westminster Mine; the remainder are offered to the public.

Further particulars, and forms of application, can be had on application to Mr. THOMAS THOMPSON, 12, Old Jewry Chambers, E.C.

TO CAPITALISTS AND OTHERS.

KIRKHAM AND CASTLE HOWARD IRONSTONE, NEAR MALTON, IN THE NORTH RIDING OF YORKSHIRE.

IT IS PROPOSED TO FORM a LIMITED COMPANY for the purpose of WORKING the VALUABLE MINES of IRONSTONE, situated near the Kirkham and Castle Howard Stations on the York and Scarborough Railway, and at present held by several gentlemen of respectable and standing, under agreements for leases from E. C. Taylor, Esq., and the late Earl of Carlisle. The lessees are desirous of properly working the mines, and constructing blast-furnaces for the manufacture of pig-iron.

The company will be incorporated under the Limited Liability Act, with a total capital of £60,000, in 3000 shares of £20 each, which will be called up as follows:—One-fourth on the commencement of the works, one-fourth eight months afterwards, one-fourth in sixteen months, and the remainder as may be required. Of this sum £50,000 will be required for carrying out the works and putting them into operation. The remaining £10,000 is a reserve fund for the credit of the company, and to meet any trading contingencies. Other matters necessary to the proper carrying out of the project will be left to the decision of the subscribers at their first meeting.

The estimated value of the lessees' interest, which they merge in the undertaking, is £3000; of this sum £1000 is the value of work done on the property in proving the minerals, and £1000 has been paid for royalty rents, which last-mentioned sum is redeemable by short workings. No promotion-money will be demanded.

The royalty rents are £d. per ton of 22½ cwt. The seam of ironstone is 12 ft. in thickness, and the calcined ironstone has been found to produce upwards of 40 per cent. in the blast-furnace, and to make a very superior quality of iron. The ironstone can be mined and delivered to the kilns at a cost, including royalty and all charges, not exceeding 2s. 9d. per ton, and the limestone, which is found on the property, at 2s. per ton.

There is a favourable site for blast-furnaces. No shafts or machinery will be required for the mining of the ironstone, which will be delivered from the drifts direct into the works, and at a higher level.

The quantity of minerals may be said to be practically inexhaustible.

The estimate, which has been carefully made, of the cost of production shows that iron can be manufactured at these works considerably under £2 per ton, which leaves a large margin of profit, even at the present low price of pig-iron.

From statistics of the Cleveland pig-iron trade for the half-year ending 30th June, 1867, it appears that the make of the district was 83,175 tons in excess of the previous half-year; the demand carried off the whole of this extra production, with the exception of 8000 tons. This is a very satisfactory state of things, and shows the stability of the trade of the district. At the present time the rate of production is above 1,120,000 tons per annum.

The Kirkham and Castle Howard properties possess unusual facilities for the cheap manufacture of pig-iron, and will compare favourably with any other district in the kingdom.

It may also be stated that the slag can be disposed of in any quantity, there being a very large district of country commanded by the Derwent navigation, which adjoins the proposed works, at present almost entirely desolate of road material.

Arrangements have been made by the lessees for the works to be constructed under the personal superintendence of Mr. J. BECKTON, C.E., Whitby; and full information will be given and subscriptions received by Messrs. JACKSON, WILSON, and JACKSON, solicitors, Malton; or to Messrs. EMMETS, WATSON, and EMMET, solicitors, 24, Bloomsbury-square, London, W.C.

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The stone may be had of a neutral grey colour, or green with

sense and judgment on the part of the men, in spite of what I take to be bad advice." Therefore, seeing that Mr. MARKHAM's services have been recognised by the men he opposed in the first instance, and who now admit the justice of his position, we consider that he has not only deserved well of those with whom he is more immediately connected, but of the employers of labour throughout the country, as well as of the intelligent body of workmen who are desirous of raising themselves in the social scale. For the working man to improve his condition, he must be in a position to sell his labour to the best advantage, and the man who assists him to do so is in every respect a public benefactor. From a knowledge of Mr. MARKHAM, we can say there are few men who have done more to benefit those who are in his service, or who has done so much to advance the education of the workmen's children, and it is gratifying to find such valuable services at last meeting with the recognition they so justly deserve.

LEAD ON THE MENDIPS—THE "THE TOWN-FIELD."

The Mendip Hills, in Somersetshire, are known to the miners and metallurgists of the present as the indelible record of lead mining and lead smelting of the past. To the intelligent and thoughtful observer there are here many chapters of most interesting and instructive history. Experiences in metallurgy, ancient and modern, are exhibited and taught, by heaps of slag and thick beds of slime; and slags and slimes, the refuse and castaway of one generation, are made the profitable source of lead by another. The slimes of ancient lead washings, containing from 5 to 12 per cent. of the metal, have for some time been treated for lead by various companies, and at present we believe there are six different works in operation on the hills, where the lead stuff is either re-washed and smelted, or where, by the castilian furnace, the metal is obtained from furnaces and flues without any dressing or washing. The works we refer to are all situated in the bed of a stream, and doubtless the lead from the Mendip mines was conveyed from far and near by Roman miners to be washed by the water which still trills through heaps of lead earth that have passed through the hands of many generations of ancient miners. Fields of various kinds of agricultural produce flourish near the stream, and of slime deposits but one particular field of about 15 acres in extent, although some distance up the sloping ground from the stream has grown a grass of poison to grazing animals, and has as a consequence been for years a profitless possession. The agriculturist having failed to turn the field to profitable account, Messrs. TINN and FRYAR, the civil and mining engineers of Bristol, had their attention directed to the subject by Messrs. Stanley and Wasbrough, of Bristol, solicitors for the proprietor.

In examining the field, large pieces of pure galena were discovered here and there over its surface, and the first impressions of the engineers led to the belief that a rich lode or rich lodes of lead had been passed over, and lead ore turned out of them by operations of filling. A number of trial sinkings proved such a theory to be incorrect, but disclosed the existence of well-made sanitary drains, the bottoms of ancient smelting-furnaces, associated with lumps of metallic lead, pieces of crude Roman pottery, and pieces of ware more highly finished, and partially of the character of the beautifully made vases of Etruria. Such discoveries soon lead to the conclusion that the field in question was, doubtless, the site of an ancient lead mining and lead-smelting village, also that the smelting-furnaces and the pieces of ore lying about, were simply the remains of the heaps of galena brought from mines to be smelted, here in the valley were the washings of poorer ores, but here, in what is at present the field, were accumulated heaps of rich galena, which required no preparation for the furnace. A series of assays of the soil of the field, taken from various places, gave from 5 to upwards of 22 per cent. of lead, and 8 ozs. of silver to the ton of lead. In some places this lead-yielding soil is as much as 4 ft. in thickness, and in places quantities of pure galena may be collected.

From enquiries made on the spot, it appears that the field is traditionally known as the "Town-Field." Apart from its value as containing a large quantity of lead, it is truly of immense interest in an antiquarian point of view. Besides the discoveries already noted, several articles of personal adornment have been found, such as bronze brooch, with streaks of a kind of enamelled colouring; maces of the like description, and a finely fretted ring of gold, deeply corrugated teeth of some animal, probably those of the boar, have also been turned up. The whole soil of the field, on the surface thereof to the sub-clay, is full of interest in point of both curiosity and value. In another portion of our columns is an advertisement, from which will be seen that the field is to be sold on royalty by assay. In moving away the soil, to be smelted for lead and silver, we doubt not that many a valuable relic of ancient Roman art and lore will be found, and that other treasures, apart from argentiferous lead, will repay whoever may happen to become lessee or purchaser.

COMMERCIAL WEALTH OF THE UNITED STATES—No. III.

PROFITABLE EMPLOYMENT OF CAPITAL.

In resuming the consideration of this important topic, we are not able to the effect of the grave political and social changes which now exerting a most active influence upon the destinies of the United States. There is no reason for despondency, for if we recall the successive foreign wars and party struggles which at various periods have impoverished the country, and have shaken so greatly its foundations in the Western Continent, since the original Declaration of Independence, we shall never fail to perceive that, over the whole country was plunged in the most ruinous and debased state, it speedily emerged from the troubles into which it had been cast, and, with an energy unparalleled in the history of any countries, sprung up again indomitably and triumphantly to once more with political fortune, and reassert the right of a useful independent community to take a foremost place amongst the great civilised nations of the earth. At the conclusion of the second war with Great Britain, which terminated more than 50 years ago, America seemed quite exhausted in the struggle. Later out, at the period of the annihilation of the Old United States Bank, a fearful national crisis ensued, which recurred with more or less severity in frequent years, when our own Great National Bank had been compelled to put the screw on all the great American Houses in London. In this deplorable event, the people constituting the banking and mercantile interests in the United States regained speedily both capital and credit, and up to 1860 their progress in power, wealth, and mercantile prosperity was altogether unexampled, and made the new public truly the envy and admiration of the world. A still greater unity than any previously undergone was, however, still impending, as yet unopened in the Book of Time. The domestic civil war was out, and all Europe stood aghast at the mighty struggle which ensued. After almost superhuman sacrifices and efforts on the part of the two belligerents, the power of numbers and force of capital prevailed, not, however, without leaving a *damno* *horrificus*, in the shape of a frightful debt, to be dealt with by posterity. And now, what took place after the protracted desolating struggle was over? The Government or the people of the United States sunk ignorantly in the estimation of contemporary nations? Quite the reverse is the fact. Whatever diversity of opinions may exist amongst the sections of mankind, concerning the origin, conduct, and conclusion of the war; however deeply the fortunes and destinies of millions of people have been affected by the result, still the European world stands amazed at the elasticity of the country which has risen itself so soon after such a fearful contest, and sinking under the admiration of the mighty deeds performed confesses the existence of a mighty power in the Government and people of the United States, which could not only bring them safely, undismayed, and still united through such a perilous struggle, but whose first efforts upon the return of peace was to place the national honour and credit upon a secure foundation. With undiminished energy and prudence they have dedicated their inexhaustible resources to re-establish and uphold the financial credit of the country, as well as to stimulate those vast national undertakings which must not only immediately employment to the people, but which, with a rare example elsewhere, tends to develop the latent wealth of the destructive powers of the soil, and thereby, in the most effective manner, lightens day by day the springs of industry, which the

war had pressed down to the extremity of human endurance. If the Government of the United States errs at all by deviating from prudent economical principles in its efforts directed to the maintenance of public credit, it leans to the side of magnanimity, prompting them to do too much rather than too little. We all acknowledge that the sacrifices made upon the altar of national credit, whatever may be the final issue of events, are calculated to inspire the world with a sentiment of profound confidence in these laudable efforts, persisted in at all hazards, to maintain their financial credit unimpaired, as the surest foundation of peace, honour, and permanent security.

Public confidence being thus established upon a stable footing, the irrepressible energies of the capitalists and employers of labour in the United States are thus once more placed in a favourable position to revive actively the spirit of industry throughout the length and breadth of the land; and the undertakings already set in motion, sanctioned, and assisted by the supreme Government, bid fair to surpass in magnitude and utility anything heretofore attempted in the form of public national works. It cannot be gainsaid that the Pacific Union Railroad, coupled with the American Central Railway, without which the Union Pacific Railroad is nothing, is one of those astonishing enterprises, the very magnitude of which borders on the marvellous, or, at all events, transcends all our ordinary conceptions of a practicable work. But in the hands of the American, its very boldness constitutes one of its most alluring charms, as it will enable him to point out with pride to an admiring world the wonderful extent of the undertaking, whilst in his own mind he is secretly assured that it will not only be a self-sustaining work, but that hereafter the profits and general benefit accruing therefrom must be enormous, and acceptable to the whole world.

Since the last week a better feeling is creeping over the financial world. The improvement is slow, but, in the absence of some great political disturbing cause, promises to be sure. The influx of the precious metals continues upon a large scale, the corn markets droop, and the magic number of 95, beyond which some shallow people believe that the price of Consols cannot rise, seems to be losing its talismanic power. To all appearances the Heaven-born Tories will once more enjoy the supreme satisfaction of seeing the Government stocks advance to a point which, with good luck, may enable Mr. DISRAELI to point to the operation for which he so much envied his predecessor, Mr. GOULBURN. A wholesale conversion is one of Mr. DISRAELI's fixed ideas. But, of course, prices must advance considerably to favour the operation. Who can entertain a doubt, if we are approaching such a state of things, but that, as a great number of English railroads having fallen into a deserved disrepute, the next most desirable investments will be those of accredited, well-managed railroads abroad; and that the Union Pacific Railroad and the American Central Railway will be placed on the most favoured footing in public opinion. They are presented to the English public with their respective intrinsic merits stamped upon their features, and their undeniable utility has already secured them a safe position in the treasury of accepted facts.

Not a day now passes over, after a long and distressing trial of strength between the litigating parties, but that the shareholders and creditors of numberless winding-up companies are coming to something like a *rapprochement*. As soon as these private arrangements are completed, the financial markets, so long choked by the glut of shares locked up, but ready to be thrown upon the Stock Exchange whenever practicable, will easily absorb every security of ultimately exchangeable value, and we ought to thank Messrs. BELLOT DES MINIERES Brothers for enlightening the public upon such important questions. The common-sense value of their special undertaking is their own best title to the confidence of the public. It demonstrates beyond dispute the soundness of the undertaking, not only by the inexorable logic of facts recapitulated with irresistible force in their admirable work, the timely publication of which removes a world of prejudices which hovered over the two hemispheres, to the great damage of every investor, large or small.

MINERAL WEALTH OF THE UNITED STATES.

The yearly production of pig-iron by the furnaces of Great Britain 40 years ago was a little under 700,000 tons, and that of the United States the same year about one-fifth as much, or 140,000 tons. The production last year may be taken in round numbers for Great Britain 5,000,000 tons, and the United States at 1,250,000 tons, showing an increase of which upon the world cannot be estimated by mere figures. The total product of the world at the two periods may be stated at a little over 1,000,000 tons 40 years ago, and at 9,000,000 tons per annum at present. The following table best exhibits the distribution of coal, oil, and iron, with the extent of the various coal fields in the United States. Those fields marked with a * have iron contiguous to the coal, and those with a † both iron and oil:—

AREAS OF AMERICAN COAL FIELDS.	
Massachusetts and Rhode Island, anthracite	Square miles 300
Pennsylvania*	470
Pennsylvania, bituminous	12,656
Maryland, * ditto	550
West Virginia, * ditto	15,000
East Virginia, * ditto	225
North Carolina, * ditto	45
Tennessee, * ditto	3,700
Georgia, ditto	170
Alabama, * ditto	4,300
Kentucky, * ditto	13,700
Ohio, * ditto	7,100
Indiana, * ditto	6,700
Illinois, ditto	30,000
Michigan, * ditto	13,000
Iowa, ditto	24,000
Missouri, * ditto	21,000
Nebraska, ditto	4,000
Kansas, * ditto	12,000
Arkansas, * ditto	13,000
Indian Territory, ditto	10,000
Texas, ditto	3,000
Oregon, ditto	500
Oregon, * anthracite	100
Washington Territory, bituminous	750
West of Rocky Mountains, ditto	5,000
Total square miles	200,266

The tertiary coals and lignites, together with the yet undiscovered deposits around the Rocky Mountains, will make probably 200,000 more. The total area of the coal fields of Europe is 9775 square miles. In addition to the iron, which from the table will be seen to accompany the coal in nearly every field, it is found in many places where the coal is not. One deposit, as it is probably the largest known in the world, will be enough to satisfy us that there is no fear of a lack of the most useful metals for a long time to come.

COMMERCIAL WEALTH OF CENTRAL AMERICA.—In a Supplement to next week's Journal we shall publish an elaborate paper, by Capt. BEDFORD PIM, R.N., on the Chontales Mining District—Nicaragua, illustrated by a map of the country. The paper was read on Thursday before the Geographical Section at the British Association for the Advancement of Science, where it was received with considerable interest, as the increasing commercial importance of the part of the world on which it treats renders authentic information very desirable, especially as so little respecting it has hitherto been obtainable.

IMPORTANT EXPERIMENTS WITH COLLIERY SAFETY-LAMPS.—On Wednesday a series of experiments, with the view of testing the various lamps at present in use, were made at the Barnsley Gasworks, in the presence of the principal colliery viewers in the district. Amongst those present were Mr. Morrison, of the Pelton Colliery, Durham, who brought with him two lamps, which he has recently patented, and Mr. Mills, a member of the well-known firm of lamp makers in Newcastle. One of the principal changes in Mr. Morrison's No. 2 patent is that the glass is outside the gauze, whilst there are some slight improvements in the top and cap. On being tested, the first lamp exploded, but that arose from its not being rightly fixed. A second one, however, after being subjected to an atmosphere of gas, and a strong current of air, kept in for a considerable time, and exhibited a faint blue light at the top of the lamp for upwards of 14 minutes. The ordinary Davy and Clanny lamps, as usual, exploded, showing that for all purposes of safety they are not to be depended upon, so that their use in all mines of a fiery character ought not to be tolerated. The old Stephenson, or "Geordie," appears so far to be one of the most reliable, and did not explode. With certain improvements suggested by the colliery stewards, and also by Mr. Mills, there is every probability that the Stephenson can be made nearly all that is required of a safety-lamp. The Morrison lamps appeared to give satisfaction, and of which more will, in all probability, be

heard hereafter. Similar experiments, it appears, have recently been made at Hetton Colliery, in Durham, as well as by some makers, including Mr. Mills; and as the subject has been taken up by the North of England Institute of Mining Engineers, the result, it is said, will shortly be made known. The importance of the subject is fully shown by the great interest taken in the experiments in nearly all the colliery districts in the kingdom; and in Barnsley not only the viewers and stewards, but all persons acquainted with lamps, including Mr. Morrison and Mr. Mills, are sanguine that the investigation will result in the production of a really good and efficient safety-lamp, which has so long been desired, as a means of indicating the presence of gas, and so preventing the loss of life.

MINING, METALS, AND MINERALS—PATENT MATTERS,

BY MICHAEL HENRY,

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A provisional specification of an application for patent, No. 111, but not proceeded with, in the name of JOHN CLAYTON, of Bromwich, has lately been published. It relates to vertical furnaces for melting and refining metals. He makes the body of the furnace of a cylindrical figure, terminating at top by a cone, which cone is surmounted by a chimney about three times the height of the furnace. The chimney is closed at top by means of a damper or dampers, which may be provided with counterbalance weights. The furnace is supported on four cast-iron pillars, which may be protected on two sides by brickwork. Underneath the furnace and between the columns is a tramway, on which wagons run for receiving the scoria from the furnace. The bottom of the furnace is provided with a door, from which the scoria falls from the furnace into the wagons. At the conical part of the furnace are doors, at which the iron and fuel are introduced, and around the conical parts of the furnace is a gallery, to which the iron and fuel are hoisted by hand or other power, and introduced into the furnace. At about one-third the height of the furnace from the bottom is a series of tuyeres or air-passages through the sides of the furnace, and arranged radially, by preference, in three or more rows of twenty-one tuyeres. The tuyeres have covers at their outer ends, so that a row or part of a row of tuyeres can be closed. To prevent the tuyeres from wind, a cylindrical screen or guard, closed at top and opened at bottom, surrounds the furnace. Melted iron is tapped from the furnace, at a hole made in a small door at the bottom and one side of the furnace. He employs a sand bottom on a melted plate while the metal is being melted, but which is removed when the scoria is being taken from the furnace. The furnace is charged with alternate layers of iron and coke, the tuyeres being all opened when the furnace is in full work. When the charge has sunk below the first row of tuyeres, the first row may be closed, and below the other rows they are also closed. Two or more large tuyeres, provided with covers, may be placed near the bottom of the furnace, and these are then employed to carry on combustion. The draft produced by the chimney occasions such a copious supply of air through the tuyeres that no blast is required.

Another provisional specification of an application for patent, likewise not proceeded with, has been printed. It relates to the invention of ROBERT JAMES, of Poole, Dorset, for improvements in the means and apparatus for ventilating mines. According to this description, he proposes to arrange a series of pipes, passing down the shaft or shafts and main passages of the mine, with branch pipes leading into the workings, where they have openings provided, with regulating valves, through which series of pipes the foul air is drawn out by means of pumps or exhausting fans; and he arranges another similar series of pipes, passing down the shaft and main passages, with branches extending into the workings, also having openings, provided with regulating valves, through which series of pipes, fresh air is forced into the passages and workings, by means of pumps or fans. By thus simultaneously supplying fresh air to all parts of the mine, and exhausting the foul air, a most perfect ventilation of the mine is attained. The pumps and fans for blowing in the fresh air and exhausting the foul air are both by preference placed at top of the pit, and worked by one and the same steam-engine, the exhaust steam of which may with advantage be caused to escape from a jet situated in the upcast shaft of the mine, so as to increase the upward draught therein.

The recent applications for patent comprise one in the name of HASELTINE, No. 2438, for the manufacture of iron and steel (as a communication from Holley, of New York). Also, ELLIOTT, of Southampton, for machinery in cutting coal, slate, and other minerals, and in forming tunnels and galleries, and for other quarrying purposes, No. 2431; and STOREY and BICKERBIDGE, of Lancaster, jointly with WILSON, of Mile End, for a new method of bronzing metallic and other surfaces, No. 2433—with this last application what is called a complete specification has been filed. The recently sealed patents comprise the following:—BRECKON and DIXON, of Darlington, machinery for conveying, screening, and loading coke and other materials, No. 620.—YOUNG and BRASH, of Mid-Lothian, distillation of bituminous substances, No. 630.—HART, of London, and PARRY, of Birmingham, treating and purifying sewage, and in apparatus to be used for that purpose, No. 788.—BONNEVILLE, of London, for improved means of readily igniting fuel and lighting fires (a communication from Pilon de St. Paul, of France), No. 974.—SADLER, of Surrey, furnaces for consuming smoke, No. 1749.

FOREIGN MINING AND METALLURGY.

The smaller French metallurgical establishments complain of a want of orders. The large works, which dispose a considerable capital, are alone able to resist the general depression, and they can only do so by excessive sacrifices, which render the state of affairs still more intolerable to the small firms. Creusot, that redoubtable adversary of establishments disposing only small means, is restricting every day the radius of the outlets of the Haute-Marne works; thus its ordinary iron is offered on the Nantes market at 8L 4s. per ton, while works of the Haute-Marne can only "code" similar qualities at the rate of 8L 8s. 10d. per ton. The draught also interrupts the operations of forges which are situated on water-courses; and some establishments, so circumstanced, have decided on shortly extinguishing their blast-furnaces. This decision has not been adopted only from the accidental influence of drought, but the general state of siderurgical industry has also a good deal to do with it. In the Moselle group affairs do not improve, and the price of pig is so comparatively unremunerative that forgemasters are asking whether it would not be more advantageous to purchase pig at present prices than to produce it. In this case again, it would appear that the influence of the great establishments makes itself felt, as Creusot forwards its pig to be recast in the Moselle group. The remedy generally invoked is an understanding with a view to the restriction of production. Imports of pig from Germany and England are stated to be proceeding rather actively. Swedish irons are beginning to arrive. The Loire Mines Company will pay, Oct. 16, a dividend for the first half of 1867, or 5s. per share. Meetings are announced as follows:—Longton-Ferrand Colliery Company, Sept. 12, at Elonges; and Sougland and Fourmies Forges and Foundries Company, Sept. 25, at Paris.

The prices at which the twenty locomotives just contracted for by the Belgian State Railways have been let are stated at between 46L and 50L per ton. This price is pitifully low when compared with that obtained last year, which was 69L per ton, and the inference is irresistible that industry has much to complain of in Belgium at present. There is no change to note in the Belgian coal trade. Some deliveries by water and by railway maintain a certain movement without scarcely any importance; stocks do not diminish, and the extraction remains restricted. The Providence Forges Company will pay, Oct. 31, a dividend for the exercise 1866-7, or 2L per share. The Paradis, Avroy, and Boerive Colliery Company is paying a dividend for the first half of 1867, or 18s. 4d. per share. The Falnau Colliery Company, at Courcelles, is paying a dividend for the first half of 1867 (coupon No. 22). Meetings are announced as follows:—United Proprietors' Colliery Company, Sept. 10, at Marchienne-au-Pont; Picton-Campagne Colliery Company, Sept. 17, at Charleroi; Luxembourg Mines and Sarrebruck Forges Company, Sept. 17, at the Barbach Works near Sarrebruck; Rhens Beigian (Ruber) Collieries Company, Oct. 31, at Dusseldorf; and Sars-Longchamps and Bouvy Collieries Company.

The Imphy and St. Seurin Steelworks Company, founded in 1863, represents the union of the Imphy Works, belonging to Boigne, Rambourg, and Co., and the St. Seurin Works, belonging to Jackson and Co., and then liquidation. The capital of the new company was fixed at 240,000L, divided into 12,000 shares of 20L each. Of these shares, 3474 to the St. Seurin proprietors, and 3474 to the St. Seurin proprietors; the remaining 5126 shares found the floating capital. The fusion of the two enterprises was, however, far from improving their individual position. At the outset even, the orders on hand proved insufficient to maintain the two works in activity, and it was resolved to abandon the working of the St. Seurin establishment, the accounts of which indicated an annual loss of from 8000L to 12,000L. The Council of Administration did not, however, put this plan immediately into execution, as it waited in the hope that the position of the St. Seurin Works would improve. It is only after examining the results of the past exercise that the council recognised the absolute impossibility of continuing the working of the two establishments at the same time. The accounts of the past year resulted, in effect

perior quality, and a very fine steel can be obtained from it, capable of supporting competition with English steel. Efforts are being made to obtain from the railway companies reductions in the rates charged for the carriage of coal and minerals, and it is hoped that some satisfactory result will before long be secured. The New Westphalia Mining Company will hold a general meeting, Sept. 21, at Lepzig, at which the continuation, or otherwise, of the working of the mines undertaken by the company will be discussed. If the company is continued it will become necessary to raise additional capital.

A decided advance has occurred in Chilian copper at Havre, and the demand has been active; considerable sales have been effected at 71*l.* to 74*l.*, while more recently purchases are reported at 74*l.* to 74*l.* 8*s.* per ton for disposable, and 74*l.* 10*s.* per ton for delivery at the end of October. The movement which has occurred in Chilian copper is attributed in part to the last advices from Valparaiso. Prices have been firm at Paris, English in plates being quoted at 76*l.* to 80*l.*; Lake Superior, 86*l.*; Chilian, 74*l.* 8*s.* to 75*l.*; and Corocoro mineral, 77*l.* to 78*l.* per ton. The article has experienced no change at Marseilles, but has remained firm at previous rates. The demand on the German markets has remained within ordinary limits; there is no important change to notice in prices. Advices from the East Indies, announcing a considerable diminution in the production of the Banca mines, have produced on the Dutch iron markets a rather striking rise, and during the last few days some rather considerable affairs have been concluded: Banca has been successively dealt in at 53*l.* 1*s.* fls. to 52*l.* 6*s.* fls., to 52*l.* 4*s.* fls., to 52*l.* 3*s.* fls., to 54*l.* fls., 55*l.* fls., 54*l.* 6*s.* fls., and 55*l.* 6*s.* fls.; the closing prices were 54*l.* fls. for Banca, and 55*l.* 6*s.* fls. for Billiton, a lot of 800 ingots of this last quality having found purchasers. The favourable advices received from Holland and England have exerted a good influence on the German markets, and the former prices indicated have been sustained, with an upward tendency. At Paris the article has maintained a good position, Banca making 96*l.*, Straits 93*l.* to 94*l.*, and English 91*l.* per ton. Although there is no very active demand for lead, that metal maintains itself firmly at previous rates; this firmness is attributable, in part, to the inconsiderable supplies offered on some markets. Upon the whole, it may be said that there is no change in the quotations of the principal markets. Zinc has been quiet of late on the Breslau market; there is a certain absence of demand, but holders maintain fully previous rates. At Hamburg zinc has maintained its price, and has given rise to a more active demand. At Paris rough Silesian zinc has made 21*l.* 12*s.*, and zinc from other sources 21*l.* per ton.

REPORT FROM SCOTLAND.

SEPT. 4.—At the close of last week a sharp reaction took place in the price of pig-iron, and prices declined about 6*s.* per ton for cash, and in a month, but the heaviness wore away at the beginning of the week, and a considerable business has been done at hardening prices. Our shipments, which are short this week, are on continental and German account, and, with the assurance of peace, would be very considerably increased. The returns are:—13,905 tons for the week just ended, against 14,670 tons in the corresponding week last year, which is a deficiency of 765 tons.

This makes the shipments from Jan. 1 till Aug. 27, 1867....Tons 409,358
Same period of 1866.....369,706

IncreaseTons 39,652
Stock of iron in store in Scotland on Aug. 31, 1866Tons 439,717
" " " 1867234,539

DecreaseTons 205,178

Some brands of makers' iron are still difficult to be had, yet there are only 109 furnaces in requisition, and 63 out of blast, and there does not seem to be great inclination on the part of makers to put in all their furnaces. To-day only a limited business done at 5*s.* 6*d.* cash, 5*s.* 7*d.* a month, closing sellers at these prices. Garthshere, 62*s.*; Coltness, 61*s.*; Summerlee, 60*s.*; No. 1, g.m.b., 55*s.* 3*d.*; No. 3, 54*s.* 3*d.* The Malleable Ironworks are all better engaged, and some makers are trying to get up prices a little, which, of itself, indicates a revival of trade to such an extent that warrants makers to look for better prices. The orders are principally for shipment, and, though small, are now dropping in pretty regularly. Shipbuilding iron is rather more enquired for, and, as several contracts have been entered into during the past few days, makers expect something from this quarter immediately. Coals continue in increasing demand here, but prices are ill supported. An enquiry for splint has sprung up within the last day or two, said to be for shipment to the East, to coal the steam branch of the Abyssinian expedition. We have no great hope of any large quantity going from the Scotch ports for this purpose, but it must go from some district, and will help prices generally. The shipments show a good business for last week, being 30,800 tons, against only 25,235 tons same week of 1866. The colliers are quiet, and the masters are trying to adjust terms with their men.

The shipbuilding at the Clyde yards is once again assuming a brisk appearance, some excellent contracts having been entered into, and are in course of being laid down on some of the empty berths. Last month we launched 17 vessels, of 11,300 tons; and several vessels have been launched since my last. The Messrs. Inglis—two screws, named the *Dacca* and the *Gacare*—the first of 1700 tons, for the East Indian trade; and the latter of 96 tons, for John Dalgleish and Co., Liverpool, for their River Plate business. Messrs. Dobie and Co. launched an iron barque, named the *River Hoghly*, for Hargrave, Ferguson, and Co., Liverpool, for their South American trade; and Messrs. Robertson and Co., Greenock, a fine paddle saloon steamer, the *Cuyaba*, for A. J. Dos Santos, Monte Video. A fine iron schooner, the first iron vessel built in Montrose, has been launched from the building-yard of Messrs. Joseph Birnie and Co. The vessel is named the *Precursor*, and is owned by Provost Mitchell. Her measurement is 142 tons register, and she is to be commanded by Capt. Findlay. The vessel is intended for the Baltic trade.

The following Tabular Statement, illustrative of the prominent features of the price of Scotch Pig-Iron in the past five years, has been compiled by Mr. THOS. THORBURN, Metal Broker, St. Vincent street, Glasgow:—

	1862.	1863.	1864.	1865.	1866.
Highest price	57 <i>s.</i> 6 <i>d.</i>	69 <i>s.</i> 6 <i>d.</i>	67 <i>s.</i> 3 <i>d.</i>	65 <i>s.</i> 6 <i>d.</i>	82 <i>s.</i> 0 <i>d.</i>
Lowest price	48 <i>s.</i> 0 <i>d.</i>	50 <i>s.</i> 3 <i>d.</i>	49 <i>s.</i> 3 <i>d.</i>	50 <i>s.</i> 0 <i>d.</i>	51 <i>s.</i> 0 <i>d.</i>
Average price	52 <i>s.</i> 1 <i>d.</i>	53 <i>s.</i> 9 <i>d.</i>	57 <i>s.</i> 3 <i>d.</i>	54 <i>s.</i> 9 <i>d.</i>	60 <i>s.</i> 6 <i>d.</i>
Production	1,086,000	1,160,000	1,160,000	1,164,000	994,000
Deliveries	970,000	1,103,000	1,156,000	1,272,000	1,136,000
Stock, Dec. 31	645,000	756,000	760,000	652,000	510,000
Price of bar-iron (average)	£6 12 6	£7 7 6	£8 12 6	£7 15 6	£7 15 0
Furnaces built	175	172	168	165	164
Furnaces in blast (average)	120	127	134	133	112
Furnaces in blast (Dec. 31)	125	134	134	136	98
Miners' daily wages (aver.)	38 <i>s.</i> 6 <i>d.</i>	33 <i>s.</i> 6 <i>d.</i>	48 <i>s.</i> 0 <i>d.</i>	48 <i>s.</i> 6 <i>d.</i>	55 <i>s.</i> 6 <i>d.</i>
Increase of stock	110,000	111,000	4,000	—	—
Decrease of stock	—	—	—	108,000	142,000

REPORT FROM NORTHUMBERLAND AND DURHAM.

SEPT. 5.—The Coal and Coke Trades here continues to improve as the season advances, and they may soon be expected to be brisk. The Tyne has been well supplied with ships of all kinds lately, and, consequently, the shipment of coals and other minerals, and merchandise of all kinds, has been done on an extensive scale. The Northumberland Dock is crowded with vessels taking in cargoes of steam coal, &c. At the Tyne Docks a large business is going on both in the import and export trades, and the dock is so much crowded that an extension of it is already talked of. It appears that an agitation is about to commence respecting the rates charged for conveying iron from the Cleveland district to Liverpool. The Cleveland Ironmasters' Association complain that they are shut out from the American markets, as is evident from the fact that, although the district is making one-fifth of all the iron produced in Great Britain, and shipping to foreign ports 150,000 tons annually, besides rails and merchant iron, scarcely any shipments have been made from Liverpool, though great quantities would be sent there if the railway rates were reduced. The Cleveland Association have made a communication on the subject, and have requested the assistance of the Chamber in the matter. It is certainly to be hoped that something will be done, and that speedily, as the Cleveland iron trade ought not to be shut out from the American markets.

An alarming accident occurred on Wednesday at the St. Hilda's Pit, South Shields, but which, happily, was not attended with any fatal result, although some of the men were considerably injured. A number of men were ascending the shaft in a cage, and some were also descending in the opposite cage. The ascending cage, by some means, left the guides, and partly destroyed the woodwork of the shaft, but the engineer very fortunately felt the shock, and reversed the engine, so that further damage was prevented. The men were rescued as soon as possible, and the other people in the pit were sent out by another shaft. The injured men were conveyed to their homes, and one of them, named Johnson, is very seriously hurt.

Mr. John Robinson has been presented with a handsome testimonial, in the shape of a tea and coffee service, and salver, by the workmen of Framwile Colliery, as a mark of their esteem, upon the occasion of his leaving, to accept the office of engineer to Seaton Colliery.

EXPERIMENTS WITH SAFETY-LAMPS.—I referred to this subject last week, but there appears to be some necessity to remark further that the late experiments certainly show that great caution is necessary in the use of those lamps underground. There appears to be an impression abroad that the lamps are absolutely safe under all circumstances, but this was never asserted by the inventors of the lamps. Sir H. Davy showed, when his lamp was first introduced, that under certain circumstances the explosive mixtures would pass,

and these circumstances are produced in the case of the experiments referred to; and there can be no doubt that explosions of a serious nature have occurred in mines where the Davy lamp has been in use. It is plain, therefore, that great care ought to be taken when gas is detected in the lamp, where the explosive mixture is in a state of rest, or nearly so, and where a current of the gas is met with, still greater care ought to be used, and the lamp removed as soon possible into pure air. With respect to the Stephenson lamp, the general impression was that the flame could not be passed through it, but this was not first proved to be erroneous by the late experiments. A Committee of the House of Commons ordered certain experiments to be conducted, in order to test all the lamps in use, upwards of 20 years ago, and the result of those experiments was that the explosive mixture was passed through all the lamps, with only one exception, this being the celebrated lamp of Upton and Roberts; and the question was agitated at the time as to the advisability of enforcing the use of this lamp, and the exclusion of all others. However, this same lamp, although ingeniously constructed, was not fitted for practical use in the mine, and soon was consigned to oblivion.

REPORT FROM THE SELECT COMMITTEE ON MINES.—To resume No. 10: it is hardly possible to legislate precisely as to the actual details of colliery workings. The power of the present Inspectors, and the Acts already passed, ought to be sufficient to provide for "an adequate amount of ventilation," and also to compel "all reasonable precautions to be taken," and those matters can only be attended to reasonably by looking fairly at the general circumstances connected with any particular case. Under rule No. 14, it is recommended that "the present staff of Inspectors be increased." The want of this cannot be said to be felt here at all, however it may be requisite in other districts to increase the number of Inspectors; but the number of collieries, and other details, will best determine this point. At any rate, it seems that the agitation for sub-Inspectors has considerably cooled, and there appears to be a growing conviction that all Inspectors appointed should be of considerable standing and of good attainments. The recommendation of the committee where arbitration is required is all that can be desired. The system in use is most absurd, and perfectly unworkable to profit; it is, indeed, little better than a farce. The proposition is most opportune that the Inspector and mine owner each appoint "their own arbitrator, and that the two arbitrators appoint an umpire, and in case such arbitrators fail to appoint an umpire, the Chairman of Quarter Sessions shall appoint such umpire, as provided by the Act." This system is similar to the usual procedure in cases of dispute, and it would be quite possible to work in such a manner, and produce results satisfactory to all parties.—(To be continued.)

NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS.—A special and general meeting of members will be held at the Nevile Hall, Newcastle-on-Tyne, on Saturday. The meeting will be special, to consider an alteration in Rule 5, and some very important and interesting subjects are to be brought forward. Mr. Cochrane will read the report of the Tail-Rope Committee, and Mr. Waller's paper "On Pumping" will be open for discussion.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

SEPT. 3.—The Iron Trade presents no change to call for notice, but the Hardware Trades of South Staffordshire appear to be recovering from the depression which has long marked most branches. The export orders are better; and, as they have been small for some time, we may hope that the improvement will progress. Reference was made last week to informations lodged against Messrs. Baker and Co., the proprietors of a coal mine near Sedgley, for neglect of the general colliery rules, and also against Mr. Henry Johnson, their mining agent. The informations had reference to machinery, and it was stated that the terms of Mr. Johnson's appointment distinctly exempted him from responsibility on account of machinery. The owners pleaded guilty. It is now stated that the information against Mr. Johnson has been withdrawn. A case was heard on Tuesday, before the magistrates at Burslem, of considerable importance. It was a charge against Simeon Cooper, a fireman employed by the North Staffordshire Coal and Iron Company at their works at Talke, for using lucifer matches in the pit, contrary to the 30th special rule. This is the colliery where the dreadful accident occurred; and, warned by that, it is a rule that the shots shall only be fired by means of wires passed through the gauze of the lamps, so as to avoid the danger of striking matches. The information was laid by a man named William Robinson, who had been a collier for many years, and who deposed that he went to work on the day when the offence took place. He said that three shots were fired during the day by the defendant. On the firing of the first two shots he and the other men retired, but he said he distinctly heard matches struck by the defendant, who was specially appointed to fire the shots. The third time, he said, he saw the defendant strike a match on the gauze of the lamp. He had been frightened before, but then he went at once and informed the manager. It appeared, on cross-examination, that the informer worked for three days after this in another pit, but that he then went to Oldham, and had since been living on the funds of the Union. For the defence, the chartermaster of the pit, who is defendant's father, was called, and he said that he had told the informer that if he did not work better he could not stay; and he also said that he on that morning gave his son (the defendant) a new wire to fire shots with. A witness swore that no lucifer matches were used. As the evidence of the informer was uncorroborated, the magistrates gave the defendant the benefit of the doubt, but intimated that any offence of that nature proved before them would be visited with a heavy penalty.

The Birchills Ironworks and Collieries, situated near Walsall, and part of the estate of Mr. John Jones, were offered for sale on Tuesday, but the highest bid for the first lot—£31,000,—being far below the estimated value, the sale was not proceeded with. Messrs. Parkes, Palmer, and Hodgkinson, spade and shovel makers, of Birmingham, have been compelled to call their creditors together. The immediate cause of the stoppage was the steps taken to realise the assets of the Birmingham Banking Company. A dividend of 5*s.* in £, payable in three and six months, and secured, has been offered and accepted at a meeting of creditors.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

SEPT. 5.—The great event of the week, so far as South Derbyshire is concerned, was the presentation, on Monday, of a testimonial, consisting of a handsome silver claret jug and waiter, with an inkstand, to Mr. C. Markham, the managing director of the Staveley Works. The testimonial was entirely got up by the numerous workmen in the employ of the company, "in grateful acknowledgment of the ability and zeal displayed by him in vindicating the rights of the British workman to freedom of labour and of action against the operation of Trades Unions, and also in appreciation of his uniform kindness to his workpeople." The occasion brought together the leading men of the district, including the Duke of Devonshire, the lessor of the coal at Staveley and in other parts of the district, Mr. Whitworth, M.P., Mr. Allport, the manager of the Midland Railway, and Mr. Newmarsh, the barrister. The proceedings throughout were in the highest degree interesting, and the speeches in favour of individual freedom were so forcible, plain, and logical, as must have convinced the waverers that Trades Unions were as much injurious to the workmen as they were to the masters. To Mr. Markham the testimonial must be doubly gratifying, seeing that it was raised by the veritable working-men who at one time opposed him so strongly, and that he was the first who, single-handed, fought successfully against the power of a Union, composed of many thousands of men, well supported with funds. Mr. Markham has shown to the country at large that Unions can be successfully resisted, and the freedom of the working man ensured by prompt and decided action.

There is very little change in the Iron Trade of the district, which continues quiet, orders for nearly all qualities of merchant iron being few and unimportant. At Staveley there is a fair business being done in gas and water-pipes, but at most of the establishments not only castings, but rails and sheets, are in very moderate request. There is a very fair business being done in coal, not only for the London and Southern markets, but also for Worcester, Gloucester, and other places on the Midland route. Several of the collieries which have been very quiet for some time are improving, and the prospects of the trade are more encouraging than they have been. Nearly all branches of the Sheffield trade continue quiet, and very little alteration is expected for a week or two, until the result of the harvest is made known, when home orders will be given out more freely, should there be, as is generally expected, a fair crop of cereals

and roots. Some of the makers of heavy steel goods are moderately well off, but the rule may be said to be the reverse of that state of things.

In South Yorkshire the ironmakers continue tolerably busy, and in respect will contrast favourably with almost any other ironmaking district. Bars and sheets are very largely made at several of the largest establishments, and there is considerably more doing in rails. At Calder Vale business generally has improved, more especially in boiler-plates and bars, whilst the rail-mill is kept fairly going in completing an order for one of the home railways. In steel, the only work doing appears to be confined to rails, cranks and axles not being manufactured to any extent. In coal there has been a slight improvement during the week, more particularly with regard to steam wagons, whilst a full average tonnage of Silkstones has been forwarded to London and the depots on the Great Northern Railway. To the cotton districts a fair amount of business is being done in engine fuel and slack, and in gas nuts, to Stalybridge and other places.

Sinking operations are being carried out in various parts of the district, and in the course of a fortnight or three weeks it is expected that the second shaft of the Pinder Oaks Colliery, which is to be worked in connection with Darley Main, will be finished. At Ardley, the new shaft in connection with the Oaks is being pushed forward with considerable activity, and from the perfect character of the arrangements, and the machinery being laid down and in working order, it is expected that it will be sunk in much less time than was anticipated. So far the character of the strata has been very favourable, and a considerable depth has already been reached.

On visiting the Oaks Colliery this evening, a considerable alteration has been obliged to be made with regard to the entrance from the bottom into the workings, which will not be completed before to-morrow or Saturday morning, after which the men will put on the diving-bell suits. There is a good deal of air going into the workings, with a roar, but it has been to some extent stopped. The drawing in of the air is by no means a good sign, but rather a proof that there may be something not altogether right. Still, it is believed that there is nothing but what will be overcome by the men once they get into the workings. The air-pump has been attached to the down-cast pipe, and all is now ready for the men entering.

On Monday afternoon an explosion of fire-damp, by which six men were injured, occurred in a pit at Lockwood Colliery, near Chesterfield. The pit had been long filled with water, and the workmen have only just got to the bottom of the shaft. The men were putting in a brick arching from the shaft, when a large fissure was discovered, and upon the master-sinker examining the place with his lamp the gas exploded, the whole of the men being either buried or much shaken.

At the Wingerworth Iron and Coal Company's Speighthill Pit, near Chesterfield, Daniel Hatfield, a boy, was killed through inadvertently walking backwards into a pit; he fell upon another lad at the bottom, and so frightfully cut and wounded him that he was taken insensible to the hospital, where he now remains in a precarious state.

At Astley's Delf Colliery, at Dukinfield (686*l.* yards deep), by the breaking of a pit rope, and the consequent blocking up of the shaft, 160 colliers were imprisoned for 24 hours. Food was sent down a wire, and, happily, they were all brought to surface uninjured.

THE COLLIERY EXPLOSION NEAR ST. HELEN'S.—The inquest on the bodies of the 14 men killed by an explosion of gas in the Garswood Park Colliery, near St. Helens, on Aug. 20, was resumed on Wednesday.—Mr. Thos. Molyneux, the manager, said Topping, the fireman, was an experienced miner, and had been long employed in various capacities in many mines. Witness believed the explosion had occurred from the firing of a shot in Winstanley's place, and that a strict examination had not been made. This witness described at length the system of ventilation, and spoke of the strict supervision which was exercised over the officials.—Mr. George Gilroy, mining engineer of the Ince Hall Coal and Cannel Company, described an inspection of the mine a few days after the explosion, and, after expressing his belief that the accident originated as stated, said the ventilation was of the most ample and satisfactory kind, and the arrangements were such as he fully approved. He was of opinion that there had been very little gas, but the confined place in which it had fired had acted like the chamber of a cannon, and that thus the effects of the accident were rendered more disastrous. In reply to Mr. Higson, witness said he could not suggest any improvement in the mode of ventilation, and could only recommend great care and watchfulness in the firing of shots. The staff of

the Greek patriarch at Cairo, by whom the bishops were despatched to Abyssinia, had heard nothing of the release of the prisoners.]

The workmen engaged at the Aberdylais Tinworks have been treated by their employers, Messrs. Williams and Co., to a trip to Gloucester and back. Husbands were accompanied by their wives, and young men by their sweethearts. They were all highly pleased with the various objects of interest that abound in the ancient city, the cathedral being the chief object of attraction.

At the Great Western Colliery Company (Limited) meeting, the directors recommended a dividend of 4s. per share, making, with the interim dividend declared in March, about 6½ per cent. per annum on the paid-up capital.

The Crown Preserved Coal Company (Limited), whose works are in Glamorganshire, have declared a dividend at the rate of 6 per cent. per annum for the past half-year.

The Aberdare and Central Wales Junction Railway directors report that an Act of Parliament sanctioning the construction of the line was obtained the session before last, but that, in view of the present financial condition of railway enterprise, it has not been deemed advisable to push on the works. The shareholders are assured that no expenses beyond what are absolutely unavoidable are being entered into, and that no liability is being incurred in their name.

Another important line of railway has just been opened in South Wales—the Neath and Brecon, which, in conjunction with other lines, will open up a new route from a large portion of the South Wales district to the Midland Counties. The junction between the Neath and Brecon, and the railways conveying towards Hereford, the last uncompleted link in the chain, is also now completed, and Swansea, Merthyr, and Aberdare, the chief seat of the Welsh iron, coal, and copper trades, are by this means in direct communication with the Midland Counties. The trade between the two districts has for several years past been gradually increasing, and now that railway extension has so added to the facilities of transit, there is no doubt that the result will be a further increase in the intercourses of the two districts.

At the Penarth Dock, Harbour, and Railway Company meeting the report expressed regret at the unsatisfactory condition in which the affairs of the company stood, and the directors, in consequence, advised that there should be no dividend for this half-year. The Chairman entered into a lengthened and complicated statement of figures in connection with the accounts, and showed that they had exceeded their parliamentary capital by 6000. The difference which had existed between the company and the estate in bankruptcy of their late contractors, Messrs. Knight and Smith, involving an amount of 100,000, was in course of arbitration, and it was hoped would be very soon brought to a satisfactory termination. The directors had been compelled to enter upon a suit in Chancery against the Taff Vale Railway Company, and, in consequence of the various difficulties which existed in the affairs of the company, they thought it most desirable that there should be no dividend this half-year, but that the money in hand should be reserved for the purpose of defraying the expenses of the law proceedings, and other outgoings, in which the company were involved. The Chairman made further explanations, which appeared to be satisfactory to the shareholders present, and a resolution was passed adopting the report, and approving the prosecution of the suit in Chancery against the Taff Vale Railway Company.

FOREST OF DEAN.—Strikes in this district are, perhaps, as rare as the "rarest of the rare," but in spite of the "rarity" it is now a reality. Considering the succession of the plentitude of trade here, at least during this year, and more especially that great demands have and are daily being made upon all kinds of labour, it is somewhat surprising that the least possible reason has been given for such an event, even in its most minute form. This is truly an age of surprises, as well as an "iron age," and the thing of to-day may have a very different aspect and hold a different position to-morrow. There is an old maxim, "Content is the true philosopher's stone," and again, "Rest and be thankful." Both of these are very admirable in their place, but as no one knows where the shoe pinches except those who wear it, so it does not at all times appear expedient to condemn the working man when he does not amiably sit down, or hammer away at his forge when that quiet resignation would mean a loss of so much per week out of his hard earnings, which just now needs all the economy of his better half to make both ends meet. Still the master must not be forgotten, and while bearing in mind there has been no scarcity of orders, the price of iron has been for a considerable length of time heavily by the masters. Now, it happens that the Messrs. Russell of Lydbrook, at whose works this unfortunate strike has taken place, are amongst the sufferers who have groaned under the want of proper, reasonable, and equitable railway communication with their works. A month ago notice was given to the workmen employed at the iron forge at Lydbrook that a reduction of 6d. per ton would be put in force on Sept. 1. The workmen failing to recognise the necessity for such a step, determined not to submit, and accordingly on Monday they refused to return to their work. Happily for themselves, happily for the masters, and happily for the neighbourhood, these men are not in any way connected with Trades Union Societies, hence it cannot extend itself to any lengthened period, determined though they were at the beginning of the week not to submit to reduction.

In the neighbourhood of Coleford there is considerable animation just now, and has been for the last few months, in the digging of mine. This branch of the Forest of Dean mineral has certainly received this summer more than ordinary attention. The agriculturists around the neighbourhood of Coleford complain that they cannot find men to attend to harvesting, and when they do offer themselves they want an exorbitant price for their labour, besides rivers of cider, or some equally cheering substitute. Generally speaking, with regard to the Forest of Dean business in all its branches, it bears the same favourable position that so long has characterised it, and there is every outward indication to-day of this state of things indentifying itself with the district for some time to come at least. On Saturday last it was widely reported throughout the district that a most painful accident had taken place at the Great Western Company's colliery, in course of sinking at Bilson Green. It may be here mentioned that several notices have already appeared of the progress of these works. The company, it will be remembered, are sinking for the deep measure coal of the Forest. It would appear that on Friday seven men were sinking at nearly 200 yards distant from the top of the shaft, and the engine was drawing up a large vessel of water—this being the mode of carrying off the water—and when within a few yards of the top the iron chain connected with the rope and vessel snapped, and the vessel was hurled to the bottom with a tremendous crash. It was naturally thought that the men employed below must have been killed instantly by the fall, and hence the report. Fortunately, however, it was found, when after a considerable time someone was able to go down, that not a man was hurt, the vessel having fallen in the middle, they standing on either side, and their escape seemed a most miraculous circumstance.

INDIA-RUBBER, GUTTA-PERCHA, AND TELEGRAPH WORKS COMPANY (LIMITED), MANUFACTURERS OF

VULCANISED INDIA-RUBBER

BUFFER SPRINGS for LOCOMOTIVES and RAILWAY TRUCKS, VALVE SHEET, WASHERS, SUCTION and DELIVERY HOSE, TUBING FOR GAS, &c., MACHINE BELTING, ELASTIC STEAM PACKING in ROPE, SHEET, and RINGS, &c., &c.

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SHEET, PUMPS, TAPS, TUBING, &c., for acids and vinegar; PHOTOGRAPHIC and SURGICAL ARTICLES, SPEAKING TUBING, &c.

GUTTA-PERCHA

SHEET, TUBING, PUMP BUCKETS, VALVES, MACHINE BELTING; VESSELS for chemicals and acids, &c.; WATERPROOF CLOTHING, HOT-WATER CUSHIONS, MATTING, GROUND SHEETS, APRONS, WAGON COVERS, &c., &c.

TELEGRAPH INSTRUMENTS,

INSULATORS, BATTERIES, INSULATED WIRE, and every description of TELEGRAPH APPARATUS and STORES.

Vulcanised India-rubber specially prepared to withstand the action of Tropical climates.

WORKS, SILVERTOWN, ESSEX.

NICKEL AND COBALT REFINING, AND GERMAN SILVER WORKS, 16, OOZELL STREET NORTH, BIRMINGHAM.

STEPHEN BARKER begs to inform the Trade that he has the following articles for sale:—REFINED METALLIC NICKEL.

REFINED METALLIC BISMUTH.

OXIDE OF COBALT.

GERMAN SILVER—IN INGOTS, SHEET, WIRE, &c.

NICKEL AND COBALT ORES PURCHASED.

GOLDENHILL, COBALT, NICKEL, COLOUR, BORAX, AND CHEMICAL WORKS,

Near STOKE-UPON-TRENT, STAFFORDSHIRE.

JOHN HENSHALL WILLIAMSON, MANUFACTURER AND REFINER,

Purchaser of Borate of Lime and Tincal.

Teacher of Practical Mining in the late Mining School of Cornwall, and Principal of the Engineering Academy, 36, Upper Parliament street, Liverpool.

SAFETY FUSE.—Messrs. WILLIAM BRUNTON AND CO.,

PENHALLICK, POOL, near CAMBORNE, CORNWALL, and BRYMBO,

near WREXHAM, MANUFACTURERS OF FUSE, of every size and length, as exhibited in the Great Exhibition of 1851, and supplied to the Royal Arsenal at Woolwich, the Arctic Expedition, and every part of the globe.

For the convenience of their customers and others in the North, W. BRUNTON and Co. have recently erected a branch manufactory at Brymbo, near Wrexham, where, as at Cornwall, they are at all times PREPARED TO EXECUTE UNLIMITED ORDERS for SUPPLYING FUSE, upon warrant that it will prove equal to, if not better than, any to be procured elsewhere.

BASTIER'S CHAIN PUMP.—

This patent pump is the MOST EFFICIENT in existence for LIFTING ANY QUANTITY OF WATER from ANY DEPTH. One lifting from a depth of 170 ft. may be seen at work daily, on application to

SOLE LICENSEES,

MESSRS. J. JACKSON AND CO., ENGINEERS, 17, GRACECHURCH STREET, LONDON, E.C.

Who SUPPLY PUMPS and LICENCES.

Communications to Mr. Bastier, the patentee, to be sent to the same address.

AGENT FOR THE COUNTIES OF NORTHUMBERLAND AND DURHAM, YORKSHIRE, DERBYSHIRE, AND NORTH STAFFORDSHIRE,

MR. THOMAS GREENER, MINING OFFICE, NORTHGATE, DARLINGTON.

AGENTS FOR SCOTLAND,

MESSRS. P. and W. MACLELLAN, 197 and 198, TRONGATE, GLASGOW.

CAPTAIN DAVID ROBERTS, SLATE ROCK INSPECTOR,

LLANLHYFIN, near CARNARVON.

Capt. ROBERTS having recovered from his recent indisposition, is now prepared to inspect and report on any slate or mining property in Wales.

Letters addressed as above will be promptly attended to.

THE MINING JOURNAL.

Contract for Pig Iron.

BY ORDER OF THE SECRETARY OF STATE FOR INDIA.



NOTICE IS HEREBY GIVEN that the DIRECTOR-GENERAL OF STORES FOR INDIA will be READY, on or before Monday, the 16th instant, to RECEIVE PROPOSALS, in writing, sealed up, from such persons as may be willing to SUPPLY—

SEVENTY TONS OF PIG IRON.

And that the conditions of the said contract may be had on application, addressed to the Director-General of Stores, India Office, Cannon-row, Westminster, where the proposals are to be left any time before Two o'clock P.M., the said 16th day of September, 1867, after which hour no tender will be received.

INDIA OFFICE, Sept. 5, 1867.

GERALD C. TALBOT, Director-General.

Contract for Salt Pork.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.



THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, do hereby give notice that on TUESDAY, the 1st October next, at Twelve o'clock at noon, they will be READY to TREAT with such persons as may be willing to CONTRACT for SUPPLYING and DELIVERING into Her Majesty's Victualling Stores at the undermentioned ports, the following quantities of

SALT PORK,

All of the cure of the present season, viz.,

DEPTFORD 4800 tierces 4800 barrels.

HAULBOWLINE 2400 2400

Each tierce of pork to contain 75 pieces of 4 lbs. each, and each barrel 50 pieces of 4 lbs. each, instead of the number of pieces formerly contained in the tierces and barrels.

The pork to be delivered into the respective stores as follows, viz.,—one-third of each quantity for each place by the 15th day of January, 1868; another third thereof by the 5th day of March, 1868; and the remainder thereof by the 30th day of April, 1868; or any greater portion, or the whole, at any earlier period, if preferred by the party tendering, and to be paid for by bills at three days after date, which will be sent to parties as usual.

Their lordships reserve to themselves the power, when the tenders are opened, of contracting either for the whole, or for such part thereof only as they may deem fit, or for a greater quantity, or of not contracting for any, and also an unlimited power of selection in accepting the tenders.

Every tender must specify the name of the person by whom the meat is intended to be cured, the brand of the meat, and the place of cure.

Tenders for pork of the cure of the United States of America will not be admitted. Persons tendering for more than one port must give a separate tender for each port.

Persons tendering must give a reference to a banker for each surety proposed; and they are desired to take special notice that the use of wooden hoops is abolished, and that iron hoops only will be required for the casks, in accordance with the conditions of the contract.

A form of the tender may be obtained, and the recently altered conditions of the contract, to which particular attention is called, may be seen in the Lobby of the Department of the Controller of Victualling, Somerset House; at the Victualling Yards at Gosport and Plymouth; or by applying to the Agent Victualler at Haulbowline; or to the Collectors of Her Majesty's Customs at Bristol, Limerick, Belfast, Waterford, and Newry; or to the Secretary to the Postmaster-General at Dublin; or to the Commander conducting the Packet Service at Liverpool.

No tender will be admitted for a less quantity than 100 tierces, or 100 barrels.

No tender will be received after Twelve o'clock at noon on the day of treaty, nor any notice unless made on the printed form provided for the purpose; but it will not be necessary that the party tendering, or an agent appointed by him, should attend, as the result of the offer received from each person will be communicated to him and to his proposed sureties in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear the name of the Admiralty, and must also be delivered at the Department of the Controller of Victualling, Somerset House.

The contractors will have to pay one-half the amount of the stamps on the contracts and bonds.

By order, ANTONIO BRADY,

Registrar of Contracts and Public Securities.

Contract Department, Admiralty, Somerset House, Aug. 24, 1867.

FOR SALE.

THE MONMOUTH FORGES CHARCOAL IRONWORKS

THE WORKS consist of ONE DANDY FIRE, THREE REFINERIES, TWO PUDDLING FURNACES, HAMMERS, HOLLOW FIRES, and MILL POWER, complete in every respect, and in excellent repair (much of it being nearly new), and now in full work, making 40 tons per week of best charcoal bars, in addition to which there are all the appliances for making 25 to 30 tons per week of best coke bars; there is, also, a NEW SHEET MILL, capable of turning out 20 tons of sheets per week.

The works are situated in a district abounding in wood for charcoal, and in direct railway communication with the chief manufacturing towns of England and South Wales.

The blowing-engine and all the machinery is worked by water-power, of which there is an ample supply; but there is also steam-engine power erected, and in dry seasons used as an auxiliary power, when needed.

There are a manager's house and twenty-one workmen's cottages attached to the works, together with upwards of 20 acres of fine meadow land.

The whole is held under a lease for twenty-one years, of which sixteen are unexpired, at a very moderate rent.

To the capitalist, desirous to purchase and enter upon a lucrative business without any delay, these works offer advantages seldom combined.

Apply to JOHN LAWRENCE, Esq., Cwmbran Ironworks, Newport, or the manager at the works; or Mr. NORTON, solicitor, Monmouth.

SHALE OIL WORK FOR SALE.—TO BE SOLD, the whole

BUILDINGS, HOUSES, and WORKS, MACHINERY, ENGINES, RETORTS, PIT FITTINGS, PLANT, and ROLLING STOCK, at the work known as

THE ROMAN CAMP OIL WORK, NEAR BUXBURN;

Together with the INTEREST of the present tenant in the UNEXPIRED PERIOD of the LEASE of the SHALE FIELD adjoining, granted by the trustees of the Earl of Buchan to Messrs. William Fraser and William Fraser, Jun., for nineteen years, from Martinmas, 1864.

For further particulars apply to ADAM GILLIES SMITH, C.A., No. 59, George-street, Edinburgh; or to Messrs. J. and J. GARDINER, S.S.C., No. 46, Hanover-street, Edinburgh; by the former of whom sealed offers will be received up to 20th September proximo; but the proprietors reserve power to accept any or none of the offers made.

Edinburgh, 59, George-street, 23d August, 1867.

TO COALMASTERS AND OTHER CAPITALISTS.

VALUABLE COLLIERY, EMBRACING SIX HUNDRED ACRES, IN NORTH STAFFORDSHIRE.

TO BE SOLD, OR LET ON LEASE, an EXTENSIVE COLLIERY, now in full operation, situated in the centre of the North Staffordshire Coal Field, and including the whole of the seams of coal and ironstone usually found in the pottery district.

The property consists of about 600 acres, and the colliery is in full working order, and doing an extensive business. The pumping and winding engines and other plant are of excellent construction, and in good repair—and a large extent of level driving and other dead work having been recently done, the output may be greatly increased.

The situation is unusually eligible, being in close proximity to two of the pottery towns, and as a line of railway (for which an Act has been obtained) is about to be constructed through the centre of the estate, the colliery will shortly be placed in direct communication with the whole of the populous district of North Staffordshire and other places on the North Staffordshire Railway.

For further particulars, and to treat, apply to JOHN LANCASTER, Esq., Hilton Grange, Rugby, or to KEARY and Son, solicitors, Stoke-upon-Trent.

COUNTY OF WICKLOW

BICKFORD'S PATENT SAFETY FUSE

Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1852, in London; at the "IMPERIAL EXPOSITION" held in Paris, in 1855; at the "INTERNATIONAL EXHIBITION," in Dublin, 1855; and at the "UNIVERSAL EXPOSITION," in Paris, 1867.

BICKFORD, SMITH, AND CO., of TUCKINGMILL, CORNWALL, MANUFACTURERS OF PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement—
EVERY COIL OF FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH THE COLUMN OF GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS AS THEIR TRADE MARK.

COAL CUTTING MACHINERY.—The WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY TO MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES.

The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE.

All communications to be made to Messrs. FIRTH, DONNISTHORPE, and BOWER, No. 8, Britannia-street, Leeds.

NOTICE.—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.

NITRO-GLYCERINE, OR NOBEL'S PATENT BLASTING OIL.—The EXPLOSIVE FORCE of this BLASTING OIL is TEN TIMES that of GUNPOWDER, and the ECONOMY and SAVING in TIME, LABOUR, and COST in removing granite and hard rock, in sinking shafts, driving tunnels, and opening forward in close $2\frac{1}{2}$ is immense.

It will not explode from a spark or fire, but from concussion alone, and is consequently much less dangerous than gunpowder or gun-cotton.

Being heavier than water it sinks to the bottom of a wet hole, no other tampering than water being required.

One charge of this blasting oil, which is now being used with wonderful effect in all the largest slate quarries in North Wales, will displace as much slate rock as four or five charges of gunpowder; and its great force, acting on a large quantity of good slate rock, shatters and dis-places it at the natural joints, or cracks, without damaging the slabs nearly so much as the more numerous blasts from any other blasting material would do.

This invaluable quarrying agent may now be obtained from Messrs. WEBB and Co., Carnarvon, sole consignees from the patentee.

DEERING'S PATENT ENGINE FOR TUNNELLING MIXING, QUARRYING, and BLASTING in OPEN CUTTING.—A SAVING of THIRTY to SIXTY PER CENT. in labour effected where the cost of adit exceeds £6 per fathom.

TIME for DRIVING ADIT REDUCED FIFTY to SEVENTY-FIVE per cent.

"These drilling engines are in daily use at the zinc mines of the Vließle Montagne," &c. Times, Dec. 24, 1866.

"One of these machines was shown to work in an exceedingly satisfactory manner upon hard granite."—Engineering, Dec. 21, 1866.

Particulars may be obtained of Mr. DEERING, or Mr. GROVER, 30, Duke Street, Westminster.

JOHN AND EDWIN WRIGHT,
PATENTEES.
(ESTABLISHED 1770.)
MANUFACTURERS OF EVERY DESCRIPTION OF IMPROVED

PATENT FLAT AND ROUND WIRE ROPES. From the very best quality of charcoal iron and steel wire.

PATENT FLAT AND ROUND HEMP ROPES.

SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CONDUCTORS, STEAM PLOUGH ROPES (made from Webster and Horsfall's patent steel wire), HEMP, FLAX, ENGINE YARN, COTTON WASTE, TARPAULIN, OIL SHEETS, BRATTICE CLOTHS, &c.

UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.
UNIVERSE WORKS, GARRISON STREET, BIRMINGHAM.
No. 2, OSWALD STREET, GLASGOW.
CITY OFFICE No. 5, LEADENHALL STREET, LONDON, E.C.

Swan Rope Works.
GARNOCK BIBBY, AND CO.,
CHAPEL STREET, LIVERPOOL.
MANUFACTURERS of FLAT and ROUND HEMP and IRON and STEEL WIRE ROPES for MINING, RAILWAY, and SHIPPING PURPOSES.
MANILLA ROPE of SUPERIOR QUALITY, FIFTY PER CENT. STRONGER and THIRTY PER CENT. CHEAPER than Russian hemp rope.
WIRE ROPE of FIRST-QUALITY WIRE, and the HIGHEST STANDARD of STRENGTH.

THOMAS TURTON AND SONS,
MANUFACTURERS OF
CAST STEEL for PUNCHES, TAPS, and DIES,
TURNING TOOLS, CHISELS, &c.
CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT and CRANK AXLES, SHAFTS and FORGINGS OF EVERY DESCRIPTION.

DOUBLE SHEARSTEEL FILES MARKED BLISTER STEEL, T. T U R T O N . SPRING STEEL, EDGE TOOLS MARKED GERMAN STEEL, WM. GREAVES & SON.
Locomotive Engine, Railway Carriage and Wagon Springs and Buffers.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD,
LONDON WAREHOUSE, 25, QUEEN STREET, CANNON STREET, CITY, E.C.,
Where the largest stock of steel, files, tools, &c., may be selected from.

NERVOUS DEBILITY: ITS CAUSE AND CURE.—Before seeking aid from the so-called remedies without medicine, read this valuable work on the Treatment and Cure of Nervous and Physical Debility, Loss of Appetite, Pains in the Back, Spermatorrhœa, &c., with Plain Directions for Perfect Restoration to Health. Sent post free to any address, on receipt of two postage stamps. Letters of enquiry or details of case promptly answered.

Address, DR. SMITH, 8, Burton-crescent, London, W.C.

CURE YOURSELF BY THE PATENT SELF-ADJUSTING CURATIVE AND ELECTRIC BELT.—Sufferers from nervous debility, painful dreams, &c., can now cure themselves by the only guaranteed remedy in Europe, protected by Her Majesty's great seal. Free for one stamp by H. JAMES, Esq., Percy House, Bedford-square, London.

N.B.—Medicines and fees superseded.

CONSULT DR. HAMMOND (of the Lock Hospital, &c.), No. 11, Charlotte-street, Bedford-square, London, W.C., in all those ailments which tend to embitter and shorten life, and especially those termed peculiar and confidential. At home, Nine to Two, and Six to Eight; Sundays, Ten to Twelve. The "Self-Curative Guide" post free, two stamps.

N.B.—Cases of recent infection cured in two days.

DR. WATSON (of the Lock Hospital), F.R.A.S., Member of the College of Physicians and Surgeons, on the SELF-CURE of NERVOUS and PHYSICAL DEBILITY, Loss of Spirits, Loss of Appetite, Timidity, Incapacity for Exertion, &c., with means for perfect restoration. Sent free for two stamps by Dr. WATSON, No. 1, South-crescent, Bedford-square, London. Consultations daily from 11 till 3, and 6 till 8; Sundays, 10 till 1.

Just published, post free for two stamps, **WONDERFUL MEDICAL DISCOVERY**, demonstrating the true causes of Nervous, Mental, and Physical Debility, Loss of Spirits, Indigestion, Want of Energy, Premature Decline, with plain directions for perfect restoration to health and vigour, WITHOUT MEDICINE. Sent free on receipt of two stamps, by W. HILL, Esq., M.A., Berkeley House, South-crescent, Russell-square, London, W.C.

By post, from the author, 1s. 1d. sealed ends, 20 stamps.

MANKHOOD.—A Medical Essay on the Cause and Cure of Premature Decline in Man, founded on the results of a successful practice of 20 years in the treatment of nervous and physical debility, sterility, impotency, effects of climate, and infection.

By J. L. CURTIS, M.D., 12, ALBEMARLE STREET, PICCADILLY.

REVIEWS OF THE WORK.

"MANHOOD.—We feel no hesitation in saying that there is no member of society by whom the book will not be found useful, whether such person hold the relation of a parent, preceptor, or clergyman."—See Evening Paper.

"Dr. Curtis has conferred a great boon by publishing this little work, in which is described the source of those diseases which produce decline in youth, or more frequently premature old age."—Daily Telegraph, March 27, 1866.

Also, from the same author, for 1s., or 16 stamps sealed,

DR. CURTIS'S MEDICAL GUIDE TO MARRIAGE. A Practical Treatise on its Physical and Personal Obligations. With rules for removing certain disqualifications which destroy the happiness of wedded life.

Sold by ALLEN, 11, Ave Maria-lane; MANE, 39, Cornhill, London.

Consultations daily, from Ten to Three, at No. 12, Albemarle-street, Piccadilly, London, W.

RHONDDA VALLEY, GLAMORGANSHIRE.
TO COLLIERIES PROPRIETORS, CAPITALISTS, AND OTHERS.
VALUABLE COLLIERIES FOR SALE.

MR. DAVID EVANS WILL SELL, BY AUCTION, at the New Inn, Pontypridd, on Wednesday, the 16th day of September, 1867, at Three for Four o'clock in the afternoon, subject to such conditions of sale as shall be then produced, all that valuable COLLIERIES known as the

"LAN COLLIERY."

Situate in the RHONDDA VALLEY, within one mile of Pontypridd, and about thirteen miles from the port of Cardiff, comprising that excellent and well-known house coal vein, known as the No. 1 vein, under the Landraw and Gelly-won Estates, the surface of which is about 600 acres in extent, held under an advantageous lease from Messrs. Thomas, for a term of twenty-one years from the 30th day of June, 1866, subject to a moderate dead rent and royalties, with average clause, together with the colliery, will be sold.

All the trams, tram-plates, wood, colliers' tools, weighing machine, weigh house, blacksmiths' shop, blacksmiths' tools and iron, carpenters' shop, stable, house, five canal boats, and other requisites for carrying on the colliery.

The horses and harness employed in the colliery will have to be taken by the purchaser at a valuation.

The colliery has some very special advantages which recommend it to the notice of purchasers. It is worked by level, and has a natural drainage, and is now in full working order. The vein is of excellent quality, and has been proved on several sides of the property. The coal is now taken from the colliery by means of Messrs. Thomas' tram-road, which passes through the towns of Pontypridd and Treforest, passing close by the Taff Vale Ironworks to Messrs. Thomas' canal, which enters the Glamorganshire Canal at Dowlas Lock, a point eleven miles from the Port of Cardiff. The way-leave to the Glamorganshire Canal is free.

The distance from the level to the Rhondda branch of the Taff Vale Railway is about 300 yards.

To view, apply to Mr. WILLIAM THOMAS, the overman at the colliery.

A plan of the property may be seen on application to Mr. HENRY MORGAN, Mining Surveyor, Pwllgwyn Cottage, Pontypridd.

For further particulars and copies of conditions of sale, apply to MESSRS. GROVER and DAVIS, Solicitors, Cardiff; or to the Auctioneer, Pontypridd.

SCRAESDON FORT, CORNWALL (FOUR MILES FROM PLYMOUTH).

TO CONTRACTORS, MINE AGENTS, BUILDERS, AND OTHERS.

M. HENRY SENDEY has received instructions from the Executors of the late Mr. George Roach, contractor, who have completed their contract, to SELL, BY AUCTION, on Tuesday, September 24, 1867, and following days, upon the Works at Scraesdon Fort, their most COMPLETE and VALUABLE CONTRACTORS'

PLANT AND MACHINERY. comprising—TWO STEAM ENGINES and BOILERS; two sets of winding gear, very superior lime and mortar mills; iron and steel wire ropes, by Newall, of Gateshead; and apparatus, by Willoughby Brothers, of Plymouth, for working an incline tramway one mile long; a railway weighing machine, by Huxham and Brown, of Exeter; 160 tons of railway metals, switches, points, and crossings; 40 railway wagons and trolleys.

Twenty VALUABLE LINCOLNSHIRE AND OTHER HORSES, in excellent condition, with all their gear and tackle; a complete set of stable utensils; 12 dobbies and other carts; 100 wheelbarrows, planks, &c.

A POWERFUL 6-ton DERRICK CRANE, and several smaller ditto on movable platforms; two overhead travelling winches, capable of lifting from 4 to 6 tons, with carriages, driving shafts, and trussing bars, complete, adapted to spans of from 50 to 70 feet.

Two 30-ton BARGES, with all their masts, sails, and spars, complete; a large quantity of timber, in balk, piles, and firewood; carpenters' benches; masons' quarrymen's, and complete sets of blacksmiths' tools, bellows, anvils, derrick and other chains of every description, new and old iron, steel bars, &c., &c., also, workmen's cottages, temporary stores, engine-houses, stables and offices, workshops, &c., as now standing.

May be viewed seven days preceding the day of sale, and catalogues had of Mr. HENRY SENDEY, the auctioneer, Ridgeway, Plympton; of the agent, on the works; at the Royal Hotel, Globe Hotel, Chubb's Commercial Hotel, Thomas's Great Western Hotel, and the Albion Hotel, Plymouth; at the Royal Hotel, and Hawton's Crown Hotel, or at Mr. HEDDON'S, printer, Devonport; and at all the principal inns throughout Devon and Cornwall.

Sale to commence each day at half-past 10 A.M. Refreshments will be on the table from 1 to 2 o'clock, after which time only to be had by ticket obtained from the auctioneer.

Mr. H. SENDEY begs to call the particular attention of the public to the above valuable stock and materials, as the greater part has been in use only for the Scraesdon contract, and, consequently, is in first-rate working condition.

Dated 21st August, 1867.

UPSET PRICE REDUCED.

FOR SALE, BY PUBLIC ROUP, within the Faculty of Procurators' Hall, St. George's-place, Glasgow, on Wednesday, the 25th day of September, 1867, at Two o'clock in the afternoon,

THE GARTNESS IRON AND STEEL WORKS, AIRDRIE, near GLASGOW, in the county of LANARK.

These works are distant about two miles from Airdrie, and a short distance from Clarkston Station, and they are in close proximity to the North British Railway. The works consist of—

First.—The GARTNESS MALLEABLE IRONWORKS, including eighteen puddling furnaces and four mill-heating furnaces, forging and finishing rolls, with connecting machinery and plant for manufacturing merchant bars, rails, and angle iron, and driven by a horizontal high-pressure steam-engine, of 30 in. cylinder and 6 ft. stroke. There are also two patent steam hammers.

Second.—The HIGH MOFFAT STEAM and WATER FORGE, consisting of three puddling and three scrap-iron furnaces, with cranes, and a 3-ton patent steam hammer, capable of producing forgings of 12 tons weight. In the water forge the helve hammer is driven by a water-wheel, and forgings up to 20 cwt. can be easily manufactured. There is one puddling and one scrap-iron furnace, with crane and necessary plant, with a recently erected steel melting twelve-holed furnace.

Third.—The LOW MOFFAT FORGE, driven by water power, having a helve hammer, two scrap-iron furnaces, with a crane, and all necessary plant for manufacturing forgings up to 30 cwt.

There are thirty-eight cottages for workmen, a large store, as well as a house for a foreman and a manager's house, with stabling, outhouses, and other accommodation.

Fourth.—The whole stock of PIG-IRON, SCRAP-IRON, WOOD, TOOLS, and other effects, situate in and about the works, conformable to inventory thereof. For further particulars as to the property and inventories of the machinery and plant, application may be made to Mr. HERBERT H. CANNAN, 8, Walbroke, London; or to Messrs. M'GRIGOR, STEVENSON, and FLEMING, Writers, 156, St. Vincent-street, Glasgow, who will exhibit the title deeds and articles of sale. Glasgow, August 31, 1867.

ALSTON, CUMBERLAND.

FOR SALE, BY PRIVATE BARGAIN, the WHOLE INTEREST of the present shareholders in

BIRCHY BANK MINE.

The take extends in length 600 fathoms adjoining the Rodderupell Mining Company's ground on the west, and in breadth 20 fathoms north of the north vein, and 20 fathoms south of the south vein.

Application to be made to Mr. JOHN PEART, Mining Agent, Alston; or J. H. INGLEDEW, Esq., Solicitor, Dean-street, Newcastle-on-Tyne.—July 29.

SPECIAL NOTICE.

CLAYTON, SHUTTLEWORTH, AND CO.

At the Triennial Trials of the ROYAL AGRICULTURAL SOCIETY OF ENGLAND, held at Bury St. Edmunds, July, 1867, received

the following AWARDS:—

For Single Cylinder Portable Steam Engine,—THE FIRST PRIZE OF £25.

For Double Cylinder Portable Steam Engine,—THE FIRST PRIZE OF £25.

For Horizontal Cylinder Fixed Engine,—THE FIRST PRIZE OF £20.

For Double Blast Finishing Thrashing Machine,—THE PRIZE OF £15.

Also, THE SOCIETY'S SILVER MEDAL for Adjusting Blocks for Machines.

The duty performed by all CLAYTON, SHUTTLEWORTH, and Co.'s Engines on this occasion considerably exceeded that of any others, and has never been equalled at ANY of the trials of the Society. CLAYTON, SHUTTLEWORTH, and Co. refer with pleasure to the fact that the duty of their "Commercial" or single valve engine at Chester, so long ago as 1858, was not equalled by any "ordinary" Engine at Bury.

CLAYTON, SHUTTLEWORTH, & CO., LINCOLN; and 78, LOMBARD STREET, LONDON.

PARIS EXHIBITION, CLASS 52.

MEDAILLE D'HONNEUR.

APPLEBY BROTHERS,
EMERSON STREET, SOUTHWARK

FIG. 1.



FIG. 1.—PATENT PORTABLE PUMPING ENGINE, WITH PUMP FIXED TO ENGINE; made in all sizes.

FIG. 2.

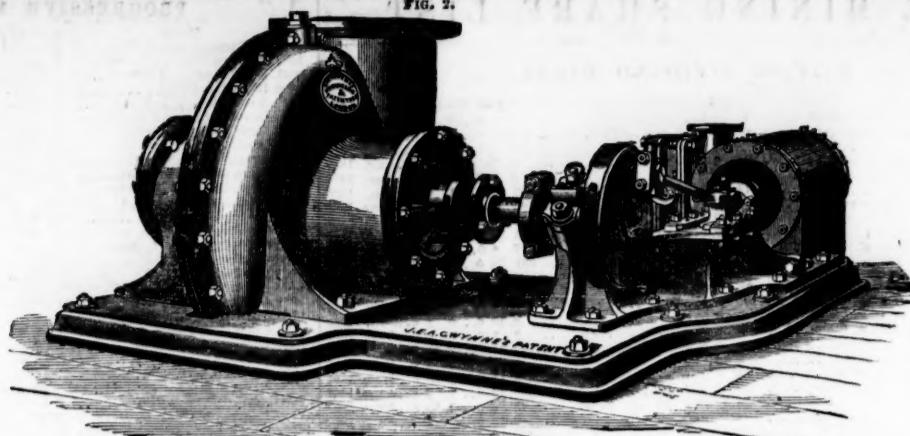


FIG. 2.—PATENT PUMPING ENGINE, FOR USE ON BOARD SHIP, COAL PITS, MINES, QUARRIES, DOCKS, CANALS, HARBOURS, &c.; FOR SURFACE CONDENSERS, PROPELLING, &c.

G W Y N N E A N D C O. S PATENT DOUBLE-ACTION CENTRIFUGAL PUMPING MACHINERY, FOR IRRIGATION, DRAINAGE, MANUFACTURING, AND OTHER USES.

G W Y N N E A N D C O. have erected the largest pumping machinery in the world; they have also erected more of all powers than any other firm in existence, and are prepared to contract that their machinery will do more work with less cost of coal than any other makers.

This Machinery has received the highest commendation; and thousands of Engineers, Manufacturers, and others using it, can be referred to in all parts of the world.

G W Y N N E A N D C O. HAVE RECEIVED THE FOLLOWING PRIZE MEDALS:—



FOR MANUFACTURING PURPOSES

They are largely in use; among others, by Paper Makers, Brewers, Distillers, Dyers, Chemists, Tanners, Sugar Refiners, Bleachers, Calico Printers, Carpet Manufacturers, Engineers and Iron Founders, Woolen Cloth and Blanket Manufacturers, Oil Refineries, Soap, Alkali, Salt, Starch, and Candle Works, Water Works, Lime and Cement Works, Quarries, Coal and Iron Mines, Sheep Washing, Public Baths, Cotton, Flax, Match, Felt, Oil and other Mills, &c.

FOR DRAINAGE WORKS

G W Y N N E and Co.'s Patent Centrifugal Pumps are in very extensive use, and some of the largest tracts of land in this country, and in Holland, Italy, Austria, France, Belgium, Denmark, Demerara, &c., are kept dry by their use.

FOR IRRIGATION WORKS

They have been selected for very extensive works in Egypt, Turkey, Spain, France, Belgium, India, Ceylon, Java, China, Australia, Porto Rico, &c., &c.

FOR EMPTYING DRY OR GRAVING DOCKS

They are quite unequalled, and will be found to excel all other arrangements, discharging a body of water in proportion to the lift, the speed of engines and power remaining the same; they will empty a dock in a shorter time and with much less power than is requisite with any other system. The first cost of machinery, the erection, and the foundations and brickwork necessary, are much less expensive than with any other arrangement, and the cost of keeping in thorough working order is merely nominal.

ESTIMATES FOR ANY SITUATION FORWARDED UPON APPLICATION. LIST OF PRICES FREE, ON RECEIPT OF TWO STAMPS.

G W Y N N E A N D C O., HYDRAULIC AND MECHANICAL ENGINEERS, ESSEX STREET WORKS, STRAND, LONDON, W.C.

IMMENSE SAVING OF LABOUR.

TO MINERS, IRONMASTERS, MANUFACTURING CHEMISTS, RAILWAY COMPANIES, EMERY AND FLINT GRINDERS, MCADAM ROAD MAKERS, &c., &c.

B L A K E ' S P A T E N T S T O N E B R E A K E R, OR ORE CRUSHING MACHINE,

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—

The Parys Mines Company, Parys Mines, near Bangor, June 6.—We have had one of your stone breakers in use during the last twelve months, and Captain Morcom reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour.

For the Parys Mining Company, JAMES WILLIAMS.

H. R. Marsden, Esq.
Ecton Emery Works, Manchester.—We have used Blake's patent stone breaker made by you, for the last 12 months, crushing emery, &c., and it has given every satisfaction. Some time after starting the machine a piece of the moveable jaw's about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of the machine to the size fixed for crushing the emery.

H. R. Marsden, Esq.
THOS. GOLDSWORTHY & SONS.

Alkali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent.

WILLIAM HUNT.

Welsh Gold Mining Company, Dolgelly.—The stone breaker does its work ad mirably, crushing the hardest stones and quartz.

WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes, for fine road metal, free from dust.

Messrs. ORD and MADDISON,

Stone and Lime Merchants, Darlington.

Kirkless Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton.

JOHN LANCASTER.

Ovoca, Ireland.—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore per hour.

WM. G. ROBERTS.

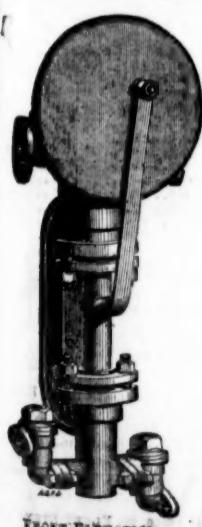
General Frémont's Mines, California.—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered third machine for this estate.

SILAS WILLIAMS.

For circulars and testimonials, apply to—

**H. R. MARSDEN, SOHO FOUNDRY,
MEADOW LANE, LEEDS,
ONLY MAKER IN THE UNITED KINGDOM.**

159



THE NEW PATENT INJECTOR, FOR FEEDING BOILERS AND RAISING WATER FOR OTHER PURPOSES.

BY ROYAL LETTERS PATENT, NO. 1539, DATED 2d JUNE, 1866.

PRICES, DELIVERED IN LONDON:—

Size.	Ram.	Stroke.	Approx. horse-power boiler supplied.	Approximate gallons thrown per hour. At 100 rev.	150 rev.	200 rev. p. min.	Price.
No. 4	1 1/4	3	15	115	172	230	£10 10
5	1 1/2	3	22	180	270	360	12 12
6	1 1/2	4	30	240	360	480	14 14
7	2 1/2	4	40	345	517	690	17 0
8	2 1/2	5 1/2	55	475	712	950	19 10
9	2 1/2	5 1/2	75	585	877	1170	22 10
10	2 1/2	6 1/2	90	720	1080	1440	25 10
11	2 1/2	6 1/2	110	870	1305	1740	28 10
12	2 1/2	8	120	1030	1545	2060	31 10
*14	3	8	230	2450	3675	—	40 0
*16	3 1/4	8	460	4900	7350	—	55 0

* The two last are double-acting.

Steam Regulator Valves, and also Check Valves, specially made to suit these Engines, can be supplied.

Terms Net Cash on Delivery.

Each Injector is guaranteed to work efficiently, and any one failing to give satisfaction may be returned.

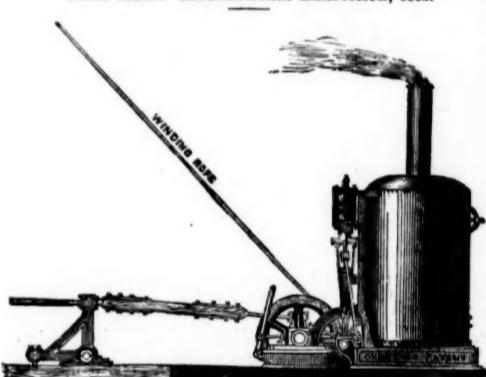
A CIRCULAR, WITH FULL EXPLANATION AND COMPARISONS, WILL BE SENT ON APPLICATION.

BROWN, WILSON, AND CO.

NO. 80, CANNON STREET, E.C.; AND VAUXHALL IRONWORKS, S., LONDON.

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Prize Medal—International Exhibition, 1862.



C H A P L I N ' S P A T E N T P O R T A B L E S T E A M E N G I N E S, &c., F O R P U M P I N G A N D W I N D I N G.

These engines are SPECIALLY ADAPTED for PITS, QUARRIES, &c. They are EXCEEDINGLY SIMPLE in ARRANGEMENT and STRONG. NO FOUNDATION of CHIMNEY STALK being NECESSARY, they can be ERECTED or REMOVED with VERY LITTLE TROUBLE or EXPENSE, and are WELL ADAPTED for HOME or FOREIGN USE.

Sizes, from 2 to 25-horse power.

STEAM CRANES, STEAM WINCHES, CONTRACTORS' LOCOMOTIVES, HOISTING ENGINES, PUMPING AND WINDING GEARING, &c.

ALEXANDER CHAPLIN AND CO.,
CRANSTONHILL ENGINE WORKS, GLASGOW.

STRONG WIREWORK, the cross wires equally bent; also BEST STAMP GRATES, both of iron and copper, and punched copper plates; DITTO TUBED. All the above promptly supplied at W. ESCOTT'S MINING MATERIAL DEPOT, TAVISTOCK, DEVON.



A charge of any given size exerts six times the explosive force of gunpowder. The enormous power confined in a short length at the bottom of the hole allows of a much greater amount of work being placed before each blast, saving considerably in the labour of drilling. Charges are made of every diameter required, the length varying with the diameter. Any number may be placed in a hole. Each charge is fully equal to one-fifth of a pound of powder.

MANUFACTURED BY
THOMAS PRENTICE AND CO., 82, GRACECHURCH STREET, LONDON.
WORKS, STOWMARKET.
LONDON AGENT.—MR. THORNE.

GUN COTTON

Is the safest and

STRONGEST

EXPLOSIVE

For every description

of

MINING

AND

QUARRYING

WORK.

82, GRACECHURCH ST. E.C.

MANUFACTURED BY

THOMAS PRENTICE AND CO., 82, GRACECHURCH STREET, LONDON.

WORKS, STOWMARKET.

LONDON AGENT.—MR. THORNE.

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES

<i>Shares.</i>	<i>Mines.</i>	<i>Paid.</i>	<i>Last Pr.</i>	<i>Business.</i>	<i>Total divs.</i>	<i>Per share.</i>	<i>Last paid.</i>
1500 Alderley Edge, c, Cheshire*	10 0 0. —	..	..	8 17 8.	0 5 0.	July 18	
200 Botallock, t, St. Just	91 5 0. —	..	170 180	488 15 0.	5 0 0.	May 18	
4000 Brookwood, t	1 11 0. —	..	..	0 5 0.	0 2 6.	Sept. 18	
1000 Bronfoidy, t, Cardiganshire	12 0 0. —	..	..	8 7 0.	0 6 0.	Aug. 18	
6400 Cashwell, t, Cumberland*	2 10 0. —	..	..	0 1 6.	0 1 6.	Aug. 18	
916 Cargol, s-l, Newlyn	15 5 7. —	..	11 13	13 12 0.	1 0 0.	Feb. 18	
1867 Cwm Eifin, t, Cardiganshire*	7 10 0. —	..	..	23 18 0.	1 0 0.	June 18	
125 Cwmystwyth, t, Cardiganshire	60 0 0. —	..	..	379 10 0.	0 0 0.	April 18	
280 Derwent Mines, s-l, Durham	300 0 0. —	..	..	174 10 0.	5 0 0.	June 18	
1024 Devon Gl. Consols, c, Tavistock†	1 0 0. 420	..	415 425	1067 0.	7 0 0.	July 18	
358 Dolcoath, c, t, Camborne	128 17 6. —	..	..	831 10 0.	3 0 0.	Aug. 18	
6144 East Caradon, c, St. Cleer†	2 14 6. 6. —	..	5 51 $\frac{1}{4}$	14 11 6.	0 2 0.	July 18	
300 East Darren, t, Cardiganshire	32 0 0. —	..	..	146 10 0.	2 0 0.	July 18	
128 East Pool, t, Pool, Illogan	24 5 0. 420	..	..	407 10 0.	5 0 0.	July 18	
5000 East Rosewarne, c, t, Gwinear	2 15 0. —	..	..	0 10 6.	0 1 6.	Jan. 18	
1906 East Wheal Lovell, t, Wendron	3 9 0. —	7	7 7 $\frac{1}{2}$	3 1 6.	0 6 8.	Aug. 18	
2800 Foxdale, t, Isle of Man*	25 0 0. —	..	..	70 10 0.	0 10 0.	June 18	
5000 Frank Mills, t, Christow	3 18 6. —	..	..	3 5 6.	0 5 0.	Feb. 18	
15000 Great Laxey, t, Isle of Man*	4 0 0. —	19 $\frac{1}{2}$	18 18 $\frac{1}{2}$	6 15 0.	0 10 0.	June 18	
5508 Great Wheal Vor, t, c, Helston†	40 0 0.	17 $\frac{1}{2}$	17 $\frac{1}{2}$ 18 $\frac{1}{2}$	11 13 0.	0 7 6.	June 18	
1024 Herdfoot, t, near Liskeard†	8 10 0.	37	35 37	42 0.	0 1 10 0.	June 18	
6000 Hington Down, c, t	5 10 6. —	2 $\frac{1}{2}$	..	0 10 0.	0 5 0.	April 18	
400 Lislurine, t, Cardiganshire	18 15 0. —	..	..	492 10 0.	3 0 0.	May 18	
9000 Marke Valley, c, Caradon	4 10 6. —	53 $\frac{1}{4}$	51 $\frac{1}{2}$ 53 $\frac{1}{4}$	3 0	0 3 0.	July 18	
30000 Minera Boundary, t, Wrexham*	1 0 0. —	..	..	0 13 0.	0 3 0.	Mar. 18	
1800 Minera Mining Co, t, Wrexham*	25 0 0. —	..	170 180	218 18 0.	6 5 0.	Aug. 18	
20000 Mining Co. of Ireland, c, t, c.	7 0 0. —	18 $\frac{1}{2}$	18 $\frac{1}{2}$	..	0 5 7.	Jan. 18	
40000 Mwndy Iron Ore*	3 5 0. —	..	..	0 6	0 2 6.	Mar. 18	
200 Parys Mines, c, Anglesey*	50 0 0. —	..	..	157 10 0.	5 0 0.	Jan. 18	
12800 Prince of Wales, t, Calstock	10 12 6. 468. —	..	50s. 52s.	0 2 6.	0 2 6.	Aug. 18	
6000 Prosper United, t, c, St. Hilary	8 14 0. —	23 $\frac{1}{2}$	..	0 5 6.	0 5 6.	Feb. 18	
1120 Providence, t, Uny Lelant†	10 6 7. 30. —	..	27 28	83 7 6.	0 10 0.	Aug. 18	
512 South Caradon, c, St. Cleer†	1 5 0. 390.	..	375 395	563 10 0.	6 6 0.	July 18	
6000 South Darren, t	3 6 6. —	..	..	0 7 1.	0 1 6.	July 18	
496 So. Wh. Frances, c, Illogan, t†	18 18 9. —	28	30 32 $\frac{1}{2}$	371 13 6.	1 0 0.	Sept. 18	
508 Summer Hill, Mold	3 13 6. —	..	..	0 15 0.	0 5 0.	Sept. 18	
6000 Tinctorf, c, t, Pool, Illogan	9 0 0. —	13 $\frac{1}{4}$	13 14	..	0 15 0.	0 5 0.	Aug. 18
2000 Trumpet Cons., t, Helston	11 10 0. —	..	12 13	11 12 6.	0 7 6.	Aug. 18	
3000 W. Chiverton, t, Perranzabuioer,	10 0 0. —	65	64 66	21 7 6.	2 0 0.	Aug. 18	
400 West Wheal Seton, c, Camborne†	47 10 0. —	165	130 180	476 10 0.	3 10 0.	Aug. 18	
512 Wheal Bassett, c, Illogan	5 2 6. —	70	60 70	625 0 0.	2 0 0.	Aug. 18	
1024 Wheal Friendship, c, Tavistock	20 0 0. —	..	..	300 10 0.	0 10 0.	Nov. 18	
4255 Wheal Kitty, t, St. Agnes	5 4 6. —	3	..	8 1 0.	0 2 0.	Feb. 18	
1024 Wheal Mary Ann, t, Menheniot†	8 0 0. 16.	14 $\frac{1}{2}$ 15 $\frac{1}{2}$	..	61 15 0.	0 15 0.	June 18	
2050 Wheal Rose, c, Scorrier	..	..	..	0 0 0.	0 10 0.	Feb. 18	
350 Wheal Seton, c, Camborne	58 10 0. —	115	110 115	246 15 0.	2 10 0.	Aug. 18	
1040 Wheal Trelawny, s-l, Liskeard†	8 17 0. —	8 $\frac{1}{2}$	..	54 14 6.	0 4 0.	June 18	
3000 Whitewell Lead, Clitheroe*	0 5 0. —	..	..	0 10 0.	0 10 0.	July 18	
17000 Wicklow, c, t, Wicklow	2 10 0. —	..	..	46 15 0.	1 0 0.	April 18	

FOREIGN DIVIDEND MINES.

20000 Australian, c. South Australia†..	7	7	6..	—	..	0	1	0..	..	Aug.	1867		
15000 Cape Copper Mining**..	7	0	0..	7½	7	7½	2	12	6..	0	10 0..	April	1867
75000 Don Pedro No. del Rey, Brazil**†..	0	14	0..	2½	2½	2½	0	7	9..	0	3 6..	Aug.	1867
25000 Fortuna, l, Spain†..	2	0	0..	13½	13	12	1	5	4..	0	2 6..	Oct.	1867
70000 Gen. Mining Assoc., Nova Scotia†..	20	0	0..	18	..	..	23	19	0..	0	12 0..	June	1867
120000 Gonnser, l, [5000 £ pd., 5000 £ pd.]..	—	—	—	—	—	—	—	—	10	per cent.	..	July	1867
130000 Linarens, t, Spain†..	3	0	0..	—	—	—	11	6	4..	0	5 0..	Jan.	1868
500000 Pannicelli, **..	3	0	0..	—	2	2½	—	—	10	per cent.	..	Yearly	
60000 Peel River Land and Mineral†..	—	—	—	—	—	—	—	—	2	..	..
30000 Pestarena, g†..	2	10	0..	2½	2½	2½	0	2	6..	0	2	6..	
100000 Pontgibaud, s-l, France†..	20	0	0..	—	—	—	4	14	3..	0	11 0..	Mar.	1867
160000 Port Phillip, g, Clunes†..	1	0	0..	1½	1½	1½	0	17	6..	0	1 0..	June	1867
1200000 scottish Australian Mining Co.†..	1	0	0..	1½	1½	1½	—	—	7½	per cent.	..	Aug.	1867
11000 St. John del Rey, Brazil**..	15	0	0..	61	..	58 60	77	5	0..	4	10 0..	June	1867
45000 Victoria (London) [25000 £ pd., 25000 £ pd.]..	—	—	—	—	—	—	0	9	0..	0	1 0..	Jan.	1868
46000 West Canada Mining Company**..	0	0	0..	—	—	—	0	19	6..	0	2 6..	May	1868

NON-DIVIDEND FOREIGN MINES

<i>Shares.</i>	<i>Mines.</i>	<i>Paid.</i>	<i>Last Pr.</i>	<i>Bus. done.</i>	<i>Last Coll.</i>
25000 Alamillos, L. Spain*†		2 0 0 ..	1 ..		•Fully pd.
100000 Anglo-Brazilian, <i>g</i> *†		0 10 0 ..	3 1/2 ..	5 1/2 3 1/2	Nov. 1866
12000 Anglo-Italian, <i>g</i> *†		0 5 0 ..	1 ..		May 1867
40000 Britany Silver-Lead Mines, France* [15750 lbs. pd.]		— ..	— ..	— ..	
2464 Burras, c. South Australia†		5 0 0 ..	— ..	— ..	
25000 Capula, s. Mexico*†		1 12 0 ..	— ..		
30000 Chontales, <i>g</i> , s. Nicaragua*†		4 0 0 ..	5 1/2 ..	5 1/2 5 1/2	Aug. 1866
12000 Cobre Copper Company, c. Cuba*†		43 10 0 ..	— ..		June 1867
10000 Copiapo Mining Company, Chile†		16 10 0 ..	— ..		May 1867
10000 Copiapo Smelting, Chile†		10 0 0 ..	— ..		
300 Copper Miners Co. of South Australia* [150 £100 pd.]		10 0 0 ..	— ..		April 1866
15000 El Chico Silver Mining and Reduction Company†		5 0 0 ..	— ..		Nov. 1866
18000 English and Canadian Mining Company†		5 0 0 ..	— ..		Nov. 1866
40000 Fortune Copper Mining Co. of Western Australia		2 0 0 ..	— ..		•Fully pd.
60000 Frontino and Bolivia, <i>g</i> , New Granada*†		1 15 0 ..	12 ..	1 1/2 3 1/2	•Fully pd.
10000 Great Barrier Land, Mining, &c., New Zealand		5 0 0 ..	— ..		June 1867
80000 Great Northern, c. South Australia†		1 11 6 ..	— ..		•Fully pd.
65000 Kapunda Mining Co., Australia*†		1 0 0 ..	— ..		Sept. 1862
7227 Lusitanian (Portugal)*†		3 0 0 ..	— ..		
82090 Marquita		0 12 6 ..	— ..		
12500 Nerbudha Coal and Iron*† [6000 £5 pd., 6500 £4 pd.]		— ..	— ..		Jan. 1867
51000 New Quebrada, c. Venezuela*†		3 10 0 ..	— ..		Aug. 1865
50000 Nova Scotia Land and Gold*†		1 15 0 ..	— ..		
15000 Otea, c. New Zealand†		2 0 0 ..	— ..		Sept. 1863
10178 Rhenish Consolidated, l. [6000 £5 pd., 4178 £2 10s. pd.]		— ..	— ..		•Fully pd.
100000 Rossa Grande, <i>g</i> , Brazil*†		0 10 0 ..	1/2 ..		May 1866
15000 San Pedro del Monte, s. Mexico*†		4 0 0 ..	— ..		June 1867
10000 San Roque, l. Spain*†		5 0 0 ..	— ..		Sept. 1866
100000 Taquari, <i>g</i> , Brazil*†		0 2 6 ..	1/2 prem.		•Fully pd.
6000 Terresea, s-l, Isle of Sardinia		2 0 0 ..	— ..		
43174 United Mexican, s. Mexico†		28 5 0 ..	2 ..	1 1/2 2 1/2	..
10000 Vancouver, c.*†		6 0 0 ..	— ..		
40000 Val Sassan, s. c. <i>g</i> *†		7 0 0 ..	— ..		Jan. 1867
45000 Victor Emmanuel, Italy*†		1 0 0 ..	— ..		•Fully pd.
20000 Washoe, <i>g</i> *†		5 0 0 ..	— ..		•Fully pd.
80000 Worthing, c. South Australia*†		1 0 0 ..	— ..		•Fully pd.
75000 Yorke Peninsula, South Australia		1 0 0 ..	— ..		•Fully pd.
45000 Yundanamutana, c. S. A.*†		3 0 0 ..	1 1/2 ..	1/2 1 1/2	•Fully pd.

BANKS AND FINANCIAL COMPANIES

<i>Shares.</i>	<i>Banks.</i>	<i>Paid.</i>	<i>Last Pr.</i>	<i>Bus. done.</i>
40000	Alliance*.....	25 0 0	13 $\frac{1}{2}$	13 $\frac{1}{2}$ 13 $\frac{1}{2}$
30000	Australasiat.....	40 0 0	67	65 67
10000	Bank of Egypt.....	25 0 0	—	—
50000	Bank of New Zealand.....	10 0 0	—	17 19
25000	Bank of Otago*†.....	10 0 0	—	—
20000	Bank of Victoria, Australasiat.....	25 0 0	—	—
20000	British North American.....	50 0 0	—	49 51
30 000	Canadian Loan and Investment*.....	2 10 0	—	—
44000	Chartered Bank India, Australia, and China†.....	20 0 0	20 $\frac{1}{2}$	19 $\frac{1}{2}$ 20 $\frac{1}{2}$
30000	Chartered Merc. of India, London and China†.....	25 0 0	31	30 31
5000	City.....	10 0 0	13	12 13
20000	Colonial.....	25 0 0	—	37 39
40000	Company of African Merchants.*†.....	3 0 0	—	2 $\frac{1}{2}$
200000	Consolidated Bank*†.....	10 0 0	—	45 $\frac{1}{2}$
200000	Credit Foncier and Mobiliar of England*†.....	9 0 0	—	3 $\frac{1}{2}$ 3 $\frac{1}{2}$
20000	East London*.....	5 0 0	—	—
30000	English, Scottish, & Austr., Chart.*.....	20 0 0	—	16 18
20000	English and Swedish*†.....	25 0 0	—	—
20000	Imperial Bank*.....	20 0 0	—	18 $\frac{1}{2}$ 19 $\frac{1}{2}$
22500	Imperial Ottoman*.....	10 0 0	9	8 $\frac{1}{2}$ 9 $\frac{1}{2}$
300000	International Land Credit*†.....	6 0 0	—	—
50000	London Chartered Bank of Australia†.....	20 0 0	—	23 $\frac{1}{2}$ 24 $\frac{1}{2}$
37500	London and County†.....	20 0 0	57	56 57
40000	London Financial Association*†.....	30 0 0	—	7 $\frac{1}{2}$ 8
72000	London Joint-Stock†.....	15 0 0	38	36 38
5000	London and River Plate*†.....	40 0 0	—	—
20000	ditto ditto New, issued at 1 $\frac{1}{2}$ prem.**.....	10 0 0	—	11
20000	ditto ditto New*.....	10 0 0	—	—
10000	London and South-Western*.....	20 0 0	—	—
5000	London and Venezuela*.....	12 10 0	—	—
50000	London and Westminster*.....	20 0 0	—	—
50000	Mercantile and Exchange*†.....	12 10 0	—	—
10000	Merchant*.....	25 0 0	—	—
5000	ditto New*.....	20 0 0	—	—
17156	Metropolitan and Provincial*†.....	20 0 0	—	—
4000	Midland*†.....	20 0 0	—	—
20000	National of Australia†.....	20 0 0	—	—
20000	National of Liverpool*.....	4 0 0	—	—
10000	National Provincial of England†.....	15 0 0	—	—
55000	ditto ditto 2d and 3d issue*†.....	42 0 0	—	—
40000	National*.....	12 0 0	—	39 $\frac{1}{2}$
50000	New South Wales*.....	20 0 0	—	—
60000	Oriental Bank Corporation†.....	25 0 0	—	43 $\frac{1}{2}$ 43 44
22720	Provincial Banking Corporation*†.....	10 0 0	—	—
20000	Provincial of Ireland*.....	25 0 0	—	88 88
10000	ditto ditto New*.....	10 0 0	—	—
4000	Union of Australia*.....	25 0 0	—	49 49
10000	Union of Ireland*†.....	22 0 0	—	—

PROGRESSIVE MINES.

<i>Shares.</i>	<i>Mines.</i>	<i>Paid.</i>	<i>Last Pr.</i>	<i>Bus. done.</i>	<i>Last Call.</i>
4000 Ballacorkish, I. of Man, I, c*	3 0 0 ..	..	..	..	Aug. 1867
3000 Bedford Unit., c, Tavistk.	2 6 8 ..	..	..	..	1½% 1½%
1031 Bedol Auri, I, Holywell	1 12 0 ..	..	..	..	May 1867
500 Billins, I, Flint.....	30 0 ..	..	..	..	Fully pd.
1245 Boscaswell, I, St. Just	7 6 0 ..	..	..	..	Dec. 1866
2500 Bosworthen and Penzance, I	4 0 0 ..	..	..	..	July 1867
5000 Bottle Hill, T, Plympton ..	1 14 6 ..	..	..	..	June, 1866
1000 Blaenddyfryn, s-l	5 0 0 ..	..	..	..	..
200 Brynford Hall, I, Flint.....	28 0 0 ..	..	..	..	Jan. 1866
5000 Bryn Gwilog, I, Flint.....	18 0 ..	..	..	..	..
1200 Bryn Gwyn, I, Mold*	9 0 0 ..	..	..	..	June, 1864
1000 Budnick Consols, c, s-l .....	..	..	..	..	8s. 10s
5004 Bwlch Consols, s-l	4 0 0 ..	..	..	..	*
6000 Bwadranl Consols, s-l	3 0 0 ..	..	..	..	..
30000 Caldbeck Fells, I, Cumber.*	1 10 0 ..	..	..	..	Dec. 1866
1000 Camborne Consols, c	18 10 0 ..	..	..	..	Feb. 1864
4600 Camborne Vn. & Wh. Frn., c, 11 14 7 .....	..	..	..	..	July 1867
11000 Cape Cornwall, t, c* [8000 £20s pd., 30000 10s. pd.] .....	..	..	..	..	Oct. 1866
914 Caradon Cons., c, St. Cleer 32 13 6 .....	..	..	..	..	Aug. 1867
1000 Carn Brea, c, t, Illogan	28 0 0 ..	10 ..	..	7 10	..
6000 Carn Camborne, c, Cambn.	2 2 0 ..	..	..	..	July 1867
5000 Carnarvonshire, I*	4 0 0 ..	..	..	..	Fully pd.
4005 Cardigan Cons., *	5 0 0 ..	..	..	..	Fully pd.
600 Cardiganshire, I*	17 10 0 ..	..	..	..	..
20000 Carysfort [3200 £2½s pd., 18000 £1½s pd.] .....	..	..	..	..	Mar. 1863
2500 Cefn Cileen, I, Flint	2 18 0 ..	..	..	..	Aug. 1866
2500 Central Minera, I*	3 17 6 ..	..	..	..	June 1867
16000 Central Snailbeach I*	1 0 0 ..	..	..	..	Fully pd.
3000 Chiverton, I, Perranzabu	9 7 6 ..	7 ..	63½% 7	..	May 1867
3000 Chiverton Moor, I, Perranz	6 8 6 ..	..	5½% 5½% 6½%	..	Ang. 1867
4000 Clara, Llywernog	2 16 6 ..	..	..	..	..
2880 Clifford Amalg., c, Gwen.	33 17 6 ..	..	7¾% -7½% 8½%	..	May 1867
50000 Connidor, c, t, Camborne*	76 10 0 ..	..	..	17 22	..
256 Condorrud, c, t, Camborne* .....	..	..	..	..	June 1867
2450 Connorre, c, sdt, Wicklow*	1 0 0 ..	..	..	..	Fully pd.
1024 Cook's Kitchen, c, Illogan	19 14 9 ..	..	..	9 11	July, 1866
6885 Copper Hill, c, Redruth*	12 10 0 ..	..	..	..	June, 1866
1035 Copperhill Clay and Tin	1 0 0 ..	..	..	..	Fully pd.
1035 Craddock Moor, c, St. Cleer*	12 6 0 ..	..	..	..	May 1867
861 Crane, c, Camborne	35 9 6 ..	..	..	..	Dec. 1866
12000 Crelake, c, Tavistock	3 12 0 ..	..	..	..	June 1867
6000 Cudrilla, c, St. Austell	5 5 0 ..	..	..	..	Sept. 1867
35000 Dale, t, North Stafford	1 0 0 ..	..	..	..	Fully pd.
4000 Devon Weal Frances, c	1 5 9 ..	..	..	..	Mar. 1867
1024 Dev. Wh. Lopes, Bickleigh	18 10 0 ..	..	..	..	Mar. 1867
12800 Drake Walls, t, Calstock*	2 5 0 ..	..	..	..	Dec. 1866
636 Ding Dong, t, Galvai*	49 14 6 ..	..	..	..	Dec. 1866
25000 Dundalk, I, Ireland, I*	0 15 0 ..	..	..	..	Feb. 1867
3000 Dyngfwm, I, Wales	13 7 0 ..	..	..	..	June, 1866
740 Eaglebrook, I*	19 15 0 ..	..	..	..	July, 1866
512 East Basset, c, Redruth*	31 10 0 ..	18 ..	..	19 20	July 1867
1000 East Basset and Gryffs, t	3 5 0 ..	..	..	..	July, 1865
6000 E. Bottle Hill, T, Plympton	0 9 6 ..	..	..	..	May 1867
4096 East Brookwood, Holme	2 8 8 ..	..	..	..	July, 1866
6000 E. Carn Brea, c, Redruth*	3 18 0 ..	..	2½% -2½% 2½%	..	..
4000 East Chiverton, I, Perranz	2 14 3 ..	..	..	..	July, 1867

Mines.

80. So. Utterton, s., Ferran.	15 0 ..	34	1/2	3/4	3/4
618a So. Conduorow, t, c. Camb.	15 6 ..				
2282 South Crever, c. Crowan.	12 9 0 ..				Oct.
1024 South Devon, c & l.	3 0 ..				
6000 S.Dolcoath&Carnarth.Con.	2 16 6 ..				
5000 So. Exmouth, J. Christow.	2 17 0 ..				
6000 So. Fowey, c. Tywardreath	0 10 0 ..				
1024 So. Herodfoot, l. Liskeard	10 15 0 ..				
30210 South of Scotland, c*....	0 17 6 ..				
3000 South Trevenna, c. t.	2 0 ..				
937 So. Wh. Crofty, c. Illogan	24 10 10 ..	15	16		Dec.
6000 South Wheal Grenville, t, c	1 0 6 ..				
400 So. Wh. Seton, c. Camborne	78 13 0 ..				
512 South Tolqua, c. Redruth.	9 10 0 ..				
64 Speare Consols, t. St. Just.	13 2 6 ..				
280 Speare Moor, t. St. Just.	6 2 0 ..				
940 St. Ives Consols, t. St. Ives*....	10 15 0 ..				
673 St. Ives Wheal Allen, t.	18 18 7 ..	7	9		Dec.
9000 St. Just Cons, t. [6000 £1 pd., 30000 10s pd.]					
7000 Stiperstones, t, Salop*....	5 0 0 ..				
2290 Strat Park, c.t.Camborne*....	43 6 8 ..				
6000 Tamar Valley, s-l.	0 5 0 ..				
3500 Tin Hill, t. St. Austell	1 8 0 ..				
6000 Tolcarne, c. Camborne	3 1 6 ..				
548 Trelyon Consols, t. St. Ives. 16	0 0 ..				
501 Treseavean and Tretherrupp	16 11 0 ..				
4440 Trevenen & Tremenheire	7 11 0 ..				
4096 Treweatha, s-l. Menheniot.	7 17 0 ..				
1439 Treworha, t. Wendron	11 15 4 ..				
6400 Tyne Head, t, c*....	0 18 0 ..				
4200 Vigra and Clogan, c. Doigt*....	5 0 0 ..				
2500 West Briton, c. Crowan*....	1 0 0 ..				
6000 West Bassett, c. Illogan*....	1 15 0 ..				
1024 West Caradon, c.t.	17 0 0 ..				
1319 West Cwrt Erdin, t. [319 £4 paid]	8 ..	7	8		
2850 W. Conduorow, t, c. Camb.	12 11 3 ..				
256 West Damsel, c. Gwennap.	38 10 0 ..				
12800 West Drake Walls, c.	0 2 6 ..				
2582 West Great Work, t.	5 11 0 ..	3 1/2	3 4		
5000 West Godolphin, t, c.	— ..				
12000 W. Maria & Fortes., c. Lam.	3 10 0 ..				
6000 Westminster, t*....	5 0 0 ..				
12800 West Prince of Wales, c.	1 0 0 ..				
1000 West Rose Down, c. Linkinh.	19 5 0 ..				
6000 West St. Ives, t, c.	0 1 0 ..				
512 West Tolquis, c. Redruth*....	54 10 0 ..				
1046 West Tremayne, c. St. Erth	0 4 0 ..				
512 W. Wh. Frances, t, Illogan	15 0 ..				
5000 W. Wh. Kitty, t. St. Agnes.	2 17 6 ..	34			
6000 Wheat Agar, c. Illogan	7 8 6 ..				
6000 Wheat Alice Alfred, t, c.	2 0 0 ..				
1000 Wheat Bassett and Grylls*....	7 18 6 ..				
512 Wheat Bleath, Redruth*....	21 10 0 ..	25	22 1/2	25	Mar.
6000 Wheat Cribor, c. Tavistock	2 4 0 ..				
6144 Wh. Damsel, c.t. Gwennap	2 15 0 ..				
489 Wh. Emily Henrietta, c. 18	5 0 ..				
4000 Wh. Emma, c. Buckfast,le.	3 19 0 ..				
6000 Wheat Grenville, c. Camb.	10 5 0 ..				
6000 Wheat Ida, s-l. St. Ives.	1 3 0 ..				
1024 Wh. Kitty, t, Uny. Lelant.	3 10 6 ..				
512 Wheat Jane, s-l. Kew.	10 10 0 ..				
898 Wh. Margaret, t, Uny. Ley*....	13 17 6 ..	6			
728 Wheat Margery, t, c.	26 14 0 ..				
100 Wheat Mary, t, Lelant*....	36 2 6 ..				
6000 Wheat Mary Florence, c*....	1 19 0 ..				
1000 Wh. Mary Hutchins, c. Plym.	2 0 6 ..				
6000 Wh. Norris, t, c. St. Cleer.	4 6 1 ..				
80 Wheat Owles, t, St. Just*....	70 3 0 ..				
6000 Wheat Sparnon, c. Redruth	3 0 0 ..				
1280 Wh. Tannack, c. Sithney.	1 18 3 ..				
1200 Wheat Trevenna, t, c*....	9 10 0 ..				
4000 Wheat Uny, t, c. Redruth*....	10 9 6 ..	1			

MISCELLANEOUS

60000	Anglo-American Telegr. [†]	10	0 0 ..	16 $\frac{1}{2}$.. 16 $\frac{1}{2}$ 17 ..
29000	Anglo-Mexican Mint [†]	10	0 0 ..	— ..
00000	Atlantic Telegraph [†]	100	0 0 ..	25 $\frac{1}{2}$.. 23 26 ..
00000	ditto 8 per cent. [†]	100	0 0 ..	67 .. 65 70 ..
29000	Australian Agricultural [†]	20	10 0 ..	— ..
40000	Australian Mort. Land, &c. [†]	5	0 0 ..	4 $\frac{1}{2}$ 5 $\frac{1}{2}$..
47000	Berlin Waterworks [†]	10	0 0 ..	13 .. 12 $\frac{1}{2}$ 18 ..
13000	ditto New [†]	4	0 0 ..	5 $\frac{1}{2}$.. 5 $\frac{1}{2}$ 5 $\frac{1}{2}$..
25000	Bolkow, Vaughan [†]	25	0 0 ..	— ..
8915	Canada Company [†]	32	10 0 ..	— ..
30000	Central American Assoc. [†]	1	0 0 ..	1 $\frac{1}{2}$.. 1 $\frac{1}{2}$ 1 $\frac{1}{2}$..
27000	ChinaStm., ship&Lab, Coal [†]	11	0 0 ..	— ..
30000	City Discount [†]	3	0 0 ..	— ..
20000	City London Real Prop. [†]	8	0 0 ..	— .. 5 5 $\frac{1}{2}$..
35000	City of Moscow Gas [†]	25	0 0 ..	16 .. 14 $\frac{1}{2}$ 15 $\frac{1}{2}$..
15041	City of Milan Improv. [†]	17	10 0 ..	— ..
4259	ditto ditto [†]	30	0 0 ..	— ..
26000	City Offices [†]	23	0 0 ..	7 $\frac{1}{2}$..
30000	Colonial [†]	15	0 0 ..	9 ..
10000	ditto [†]	22	10 0 ..	— ..
50000	Commercial Uni. (Inst.) [†]	5	0 0 ..	— ..
17500	Continental Union Gas [†]	15	0 0 ..	— .. 9 11 ..
2500	ditto ditto [†]	20	0 0 ..	— .. 13 15 ..
42000	Copper Miners [†] [20000 £25 pd., 40000 £100 pd.]	100	0 0 ..	— ..
10000	Cred. Fonc. of Mauritius [†]	10	0 0 ..	— ..
002925	Crystal Palace [†]	100	0 0 ..	26 ..
20000	ditto preference [†]	100	0 0 ..	102 ..
70000	ditto 6 per cent. pd. [†]	100	0 0 ..	105 108 ..
6000	E. Indian Land, Credit [†]	10	0 0 ..	— ..
5000	E. India Irriga. & Canalt. [†]	16	10 0 ..	— ..
9000	Ebbw Vale Iron Co. [†]	27	10 0 ..	— ..
3812	Egyptian Com. & Tradg. [†]	7	0 0 ..	— .. 1 $\frac{1}{2}$ 2 ..
9975	Electric Telegraph [†]	100	0 0 ..	— .. 138 143 ..
00000	Eng. and Australian, &c. [†]	2	10 0 ..	— .. 3 $\frac{1}{2}$.. 3 $\frac{1}{2}$..
00000	English and For. Credit [†]	7	10 0 ..	3 ..
50000	Fairbank Engineering [†]	5	0 0 ..	— .. 4 5 ..
00000	Fore-street Warehouse [†]	12	0 0 ..	12 $\frac{1}{2}$.. 12 $\frac{1}{2}$.. 12 $\frac{1}{2}$..
00000	General Credit and Disc. [†]	7	10 0 ..	5 $\frac{1}{2}$..
00000	General Stm. Navigation [†]	14	0 0 ..	28 ..
4000	Hollyhock Col. and Coke [†]	5	0 0 ..	— ..
00000	Hudson's Bay [†]	20	0 0 ..	15 .. 14 $\frac{1}{2}$ 15 ..
00000	Im. Land Co. Marseilles [†]	11	10 0 ..	— ..
00000	International Irrigation [†]	5	0 0 ..	2 $\frac{1}{2}$..
00000	Italian Irrigation [†]	20	0 0 ..	3 $\frac{1}{2}$.. 3 $\frac{1}{2}$..
00000	Italian 6 per cent. [†]	100	0 0 ..	37 .. 40 45 ..
00000	Italian Land [†]	5	0 0 ..	— ..
00000	Land Securities [†]	5	0 0 ..	— ..
40000	London African Tradg. [†]	10	0 0 ..	5 ..
00000	London, & Caledon, Marine [†]	5	0 0 ..	— ..
2060	London Dist. Telegraph [†]	5	0 0 ..	1 $\frac{1}{2}$.. 3 $\frac{1}{2}$ 1 $\frac{1}{2}$..
8225	London Gen. Omnibus [†]	4	0 0 ..	2 $\frac{1}{2}$.. 2 $\frac{1}{2}$ 2 $\frac{1}{2}$..
30000	London and Glas. Engi. [†]	25	0 0 ..	— ..
45000	London & Prov. Marine [†]	2	0 0 ..	— ..
00000	Madras Irrigation [†]	100	0 0 ..	101 .. 99 101 ..
00000	Marine Investment [†]	6	5 0 ..	— ..
25000	Mauritius Land.Cred., &c. [†]	2	0 0 ..	1 $\frac{1}{2}$..
20000	Mediterranean Ex. Tel. [†]	10	0 0 ..	2 $\frac{1}{2}$.. 1 $\frac{1}{2}$ 2 $\frac{1}{2}$..
00000	Merchant Shipping [†]	50	0 0 ..	38 ..
00000	Millwall Freehold Land [†]	100	0 0 ..	48 ..
00000	Millwall Iron works [†]	7	10 0 ..	— ..
50000	Mining Association [†]	1	0 0 ..	— .. 15 $\frac{1}{2}$ 16 $\frac{1}{2}$..
8500	Natal Land and Col., &c. [†]	5	10 0 ..	— ..
00000	National Discount [†]	25	0 0 ..	11 $\frac{1}{2}$.. 11 11 $\frac{1}{2}$..
00000	National Provin. Marine [†]	2	10 0 ..	— ..
00000	National Steam Naviga. [†]	30	0 0 ..	18 .. 16 18 ..
00000	New Consolidated Dist. [†]	3	0 0 ..	— .. 2 ..
00000	New Zealand Loan, &c. [†]	2	10 0 ..	2 $\frac{1}{2}$.. 2 $\frac{1}{2}$.. 2 $\frac{1}{2}$..
00000	New Zealand Trust, &c. [†]	5	0 0 ..	6 .. 4 $\frac{1}{2}$ 5 ..
00000	N. British & Merc. Insur. [†]	6	5 0 ..	16 .. 15 $\frac{1}{2}$ 16 $\frac{1}{2}$..
5000	Northern Assam Tea [†]	3	10 0 ..	— ..
5000	ditto B [†]	9	0 0 ..	— ..
00000	Oriental Gas [†]	5	0 0 ..	5 $\frac{1}{2}$.. 5 $\frac{1}{2}$ 5 $\frac{1}{2}$..
00000	ditto New [†]	1	0 0 ..	1 $\frac{1}{2}$.. 1 $\frac{1}{2}$ 1 $\frac{1}{2}$..
00000	Otago and Southland [†]	2	0 0 ..	1 $\frac{1}{2}$..
00000	Peninsular and Oriental [†]	50	0 0 ..	50 ..
00000	ditto ditto New [†]	50	0 0 ..	49 51 ..
100	Pickaley, Simons and Co. [†]	7	0 0 ..	— ..
00000	Rhymney Iron [†]	50	0 0 ..	25 .. 22 24 ..
00000	ditto New [†]	50	0 0 ..	7 $\frac{1}{2}$.. 6 $\frac{1}{2}$ 7 $\frac{1}{2}$..
00000	Royal Mail Steam [†]	60	0 0 ..	92 .. 92 94 ..
00000	Scottish Austra. Invest. [†]	100	0 0 ..	120 .. 115 120 ..
1200	South Australian Land [†]	25	0 0 ..	— .. 34 36 ..
00000	Submarine Telegraph [†]	100	0 0 ..	— ..
00000	ditto Script [†]	1	0 0 ..	— ..
00000	Thames & Mersey Marine [†]	2	0 0 ..	5 $\frac{1}{2}$..
00000	Unl. Kingdon Telegraph [†]	5	0 0 ..	1 $\frac{1}{2}$.. 1 $\frac{1}{2}$ 1 $\frac{1}{2}$..
00000	ditto 10 per cent. pref. [†]	5	0 0 ..	— ..

4. Mean age and a mean age with 3 standard errors of state: a) silicon load: f. tin: z. zinc

* Companies marked thus * have been incorporated with Limited Liability; those marked † have been admitted on the Stock Exchange; those marked thus ‡ have paid Dividends.

* Our object being to make the Share List correct, we earnestly call upon those who have the power to aid us, by forwarding any corrections or correction which may, from time to time, come under their notice. To shareholders, as well as those officially connected with the mines, we appeal for information. Reports from mines—in fact, mining intelligence of every description, forwarded to our office, will meet with ready attention.